

AD-A083 001

DEFENSE TECHNICAL INFORMATION CENTER ALEXANDRIA VA  
SPACE STATIONS. (U)

F/O 22/2

**UNCLASSIFIED**

APR 80  
DTIC/BIB/80-02

22

409300

4

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM										
1. REPORT NUMBER DTIC/BIB/88-02	2. GOVT ACCESSION NO. AD-A083 001	3. RECIPIENT'S CATALOG NUMBER										
4. TITLE (and Subtitle) SPACE STATIONS	5. TYPE OF REPORT & PERIOD COVERED Bibliography Jan 1964 - Nov 1979	6. PERFORMING ORG. REPORT NUMBER										
7. AUTHOR(s)	8. CONTRACT OR GRANT NUMBER(s) 13 281											
9. PERFORMING ORGANIZATION NAME AND ADDRESS Defense Technical Information Center Cameron Station Alexandria, Virginia 22314	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS PE 65601S											
11. CONTROLLING OFFICE NAME AND ADDRESS	12. REPORT DATE Apr 1980											
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)	13. NUMBER OF PAGES 286											
	15. SECURITY CLASS. (of this report) UNCLASSIFIED											
	18a. DECLASSIFICATION/DOWNGRADING SCHEDULE											
16. DISTRIBUTION STATEMENT (of this Report)  Distribution Statement A; Approved for public release; distribution unlimited												
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)												
18. SUPPLEMENTARY NOTES  Supersedes AD-703 500 and AD-A010 500												
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) <table border="0"> <tr> <td>* Space Stations</td> <td>Life Support</td> </tr> <tr> <td>* Bibliographies</td> <td>Controlled Atmospheres</td> </tr> <tr> <td>* Space Shuttles</td> <td>Aerodynamic Characteristics</td> </tr> <tr> <td>Manned Spacecraft</td> <td>Space Flight</td> </tr> <tr> <td>Rendezvous Spacecraft</td> <td>Control Systems</td> </tr> </table>			* Space Stations	Life Support	* Bibliographies	Controlled Atmospheres	* Space Shuttles	Aerodynamic Characteristics	Manned Spacecraft	Space Flight	Rendezvous Spacecraft	Control Systems
* Space Stations	Life Support											
* Bibliographies	Controlled Atmospheres											
* Space Shuttles	Aerodynamic Characteristics											
Manned Spacecraft	Space Flight											
Rendezvous Spacecraft	Control Systems											
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) <p>This bibliography contains unclassified and unlimited citations on Space Stations. These citations provide information emphasizing aerodynamic characteristics, checkout procedures, control systems, telemeter systems, electrical power systems, safety, navigation, space maintenance, space propulsion, and extravehicular activity. It also includes pertinent information on space shuttles and their operational characteristics. Four computer generated indexes are provided.</p>												

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

394981

JOB

AD-A083001

DDC FILE COPY

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

19. Cont.

Space Environments  
Physiological Effects  
Females  
Computer Programs  
Maintenance  
Checkout Equipment  
Foreign Technology  
Soft Landings  
Non-military Applications  
Orbit to Orbit Shuttles

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

**UNCLASSIFIED**

**UNCLASSIFIED**

(1)

**DTIC**

**DTIC/BIB- 80-02**

**AD- A083 001**

## **SPACE STATIONS**

**A DTIC BIBLIOGRAPHY**

**DTIC-TOS  
Cameron Station  
Alexandria, Va. 22314**

**APRIL 1980**

**DTIC  
SELECTED  
MAY 9 1980  
A**

**Approved for public release;  
distribution unlimited.**

**DEFENSE TECHNICAL INFORMATION CENTER  
DEFENSE LOGISTICS AGENCY  
Cameron Station  
Alexandria, Va. 22314**

**UNCLASSIFIED**



Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DDC/BIB/80/	2. GOVT ACCESSION NO. AD-	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle)  SPACE STATIONS		5. TYPE OF REPORT & PERIOD COVERED Bibliography Jan 1964 - Nov 1979
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s)		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Defense Technical Information Center Cameron Station Alexandria, Virginia 22314		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS PE 656015 <del>658015</del>
11. CONTROLLING OFFICE NAME AND ADDRESS		12. REPORT DATE April 1980
		13. NUMBER OF PAGES 286
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report)  Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)  Approved for public release; distribution unlimited		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES  Supersedes AD-703 500 and AD-A010 500		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) *Space Stations / Life Support ✓      Space Flights ✓ *Bibliographies / Controlled Atmospheres ✓ *Space Shuttles / Aerodynamic Characteristics ✓ Manned Spacecraft ✓ Rendezvous Spacecraft ✓		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This bibliography contains unclassified and unlimited citations on Space Stations. These citations provide information emphasizing aerodynamic characteristics, checkout procedures, control systems, telemeter systems, electrical power systems, safety, navigation, space maintenance, space propulsion, and extravehicular activity. It also includes pertinent information on space shuttles and their operational characteristics. Four computer generated indexes are provided.		

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

## FOREWORD

This unclassified/unlimited bibliography consists of 386 selected citations of reports on Space Stations.

These citations provide information emphasizing aerodynamics characteristics, checkout procedures, control systems, telemeter systems, electrical power systems, safety, navigation, space maintenance, space propulsion, and extravehicular activity. It also includes pertinent information on space shuttles and their operational characteristics.

Entries have been selected from references processed into the Defense Technical Information Center's data bank from January 1964 to December 1979.

This report supersedes DDC report bibliographies on Space Stations, AD-703 500, DDC-TAS-70-20-1, dated march 1970 and AD-A010 500, DDC-TAS-75-10, dated May 1975.

Individual entries are arranged in descending AD number sequence. Computer generated indexes of Corporate Author/Monitoring Agency, Subject, Personal Author, and Title are included.

AD-703 500	
AD-703 500	<input checked="checked" type="checkbox"/>
AD-703 500	<input type="checkbox"/>
AD-703 500	<input type="checkbox"/>
Justification	
By	
Distribution	
Availability	
Dist.	AD-703 500
A	

## F O R E W O R D

This unclassified/unlimited bibliography consists of 386 selected citations of reports on *Space Stations*.

These citations provide information emphasizing aerodynamics characteristics, checkout procedures, control systems, telemeter systems, electrical power systems, safety, navigation, space maintenance, space propulsion, and extravehicular activity. It also includes pertinent information on space shuttles and their operational characteristics.

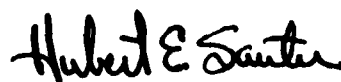
Entries have been selected from references processed into the Defense Technical Information Center's data bank from January 1964 to December 1979.

This report supersedes DDC report bibliographies on Space Stations, AD-703 500, DDC-TAS-70-20-1, dated March 1970 and AD-A010 500, DDC-TAS-75-10, dated May 1975.

Individual entries are arranged in descending AD number sequence. Computer generated indexes of Corporate Author/Monitoring Agency, Subject, Title, and Personal Author are included.

**BY ORDER OF THE DIRECTOR, DEFENSE LOGISTICS AGENCY**

**OFFICIAL**



**HUBERT E. SAUTER**

**Administrator**

**Defense Technical Information Center**

## C O N T E N T S

FOREWORD . . . . . iii

AD BIBLIOGRAPHIC REFERENCES . . . . . 1

### INDEXES

CORPORATE AUTHOR/MONITORING AGENCY . . . . . 0-1

SUBJECT . . . . . D-1

TITLE . . . . . T-1

PERSONAL AUTHOR . . . . . P-1

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-B004 682 22/2

ANALYTIC SERVICES INC FALLS CHURCH VA

Current and Projected Government and  
Commercial Space Activities.

(U)

DESCRIPTIVE NOTE: Defense div. note,  
APR 75 45P  
REPT. NO. ANSER-DDN-75-3 Patton, J. S. ;  
CONTRACT: F44620-69-C-0014

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*Space sciences, Reviews),  
Forecasting, Scientific research, Commerce,  
International, Peacetime, Industrial research,  
Government(Foreign), United States  
Government, Space shuttles, Space transportation,  
Technology, Space exploration, Remote detectors,  
Natural resources, Meteorological satellites,  
Communication satellites, Mapping, Monitoring,  
Space environments, Scientific satellites,  
Military planning, Military applications  
IDENTIFIERS: Nonmilitary applications

(U)  
(U)

This note is a summary of the growing national and international use of outer space for peaceful purposes by government and commercial activities. Emphasis is placed on: (1) The coming use of the Space Shuttle as a lower cost, more efficient space transportation system; and (2) The real and potential benefits that civilian space applications represent in meeting domestic and global economic, energy, and environmental needs. Of special significance are programs incorporating remote sensing systems, such as earth resources and meteorological satellites. The highlights of scientific knowledge obtained from space also are covered. The study concludes by examining the industrial and commercial employment of space now and in the future. This note was prepared to furnish background information in projecting future military exploitation in the space medium. (Author)

(U)

AD-B004 682

UNCLASSIFIED

PAGE

1

AD-A078 360

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A078 360 6/5 6/19

ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT  
NEUILLY-SUR-SEINE (FRANCE)Recent Advances in Aeronautical and Space  
Medicine.

(U)

DESCRIPTIVE NOTE: Conference proceedings,  
SEP 79 82P Murray, Raymond M. ;  
REPT. NO. AGARD-CP-265

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the Aerospace Medical  
Panel's Specialists' Meeting, Brussels, Belgium,  
22-26 Jan 79.

DESCRIPTORS: \*Symposia, \*Aerospace medicine,  
Oxygen equipment, Physiological effects, NATO,  
Personnel selection, Payload, Specialists,  
Training, Space shuttles, Space environments,  
Stress(Physiology), Space crews, Females

(U)

Two papers presented at the meeting of the  
Aerospace Medical Panel in Brussels, on the  
26 January 1979, provide valuable data gained from  
the experience with the selection and training of  
Space Shuttle payload Specialists as well as  
a review of physiological problems expected during  
the forthcoming Space Shuttle operation because  
of the environmental stress of space life. Three  
other papers given in this meeting session are  
intended to update the Aerospace Specialist in  
the selection aircrew (including female personnel),  
basic science concepts and clinical operational  
requirements of advanced oxygen systems designed for  
future high-performance combat aircraft and - for the  
first time at AGARD meetings - medical and  
physiological problems faced during the development  
and operation of commercial supersonic vehicles.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A077 675 5/1

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF SYSTEMS AND LOGISTICS

Space Transportation System Western Launch Site Construction Management Information System - A Case Study.

(U)

DESCRIPTIVE NOTE: Master's thesis,

SEP 79 98P Griffn ,G. Scott ;Mardis, James M. ;

REPT. NO. AFIT-LSSR-4-79B

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Management information systems, \*Construction, Air Force facilities, Launching sites, Space shuttles, Army Corps of Engineers, Theses

(U)

IDENTIFIERS: COEMIS(Corps of Engineers Management Information System)

(U)

The Corps of Engineers Management Information System (COEMIS) is used by the Corps of Engineers in their role as Construction Agents on Air Force projects built under the Military Construction Program.

This research investigates the ability of COEMIS to meet Air Force informational needs by examining the construction management effort in progress on the Western Launch Site Space Transportation System Facilities at Vandenberg Air Force Base, California.

The research concluded that the Corps of Engineers Management Information System can be an effective, efficient management tool which has the capability to meet Air Force needs provided: (1) implementation of real time computer interfaces, (2) Air Force participation in COEMIS, and (3) establishment of a split data base. The results of this study should be applicable to all major Air Force construction projects managed by the Army Corps of Engineers. (Author)

(U)

AD-A077 675

UNCLASSIFIED

PAGE

2

AD-A076 567

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A076 567 17/7

ARMAMENT DEVELOPMENT AND TEST CENTER EGLIN AFB FL

Proceedings of the Biennial Guidance Test Symposium (9th) Held at Holloman Air Force Base, New Mexico on 10-12 October 1979. Volume I.

(U)

OCT 79 389P

REPT. NO. ADTC-TR-79-11-VOL-1

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-C020 448L.

DESCRIPTORS: \*Guidance, \*Test methods, Global positioning system, Space shuttles, Inertial systems, Inertial navigation, Inertial guidance, Gyroscopes, Accelerometers, Strapped down systems, Symposia

(U)

These proceedings contain papers included in the Ninth Biennial Guidance Test Symposium. This symposium, hosted by the Central Inertial Guidance Test Facility, is directed toward the exchange of information, stimulation of new ideas, and discussion of recent developments in the field of guidance testing. The papers presented include such topics as the Global Positioning System, the Space Shuttle, Aircraft Inertial Navigators, Component Evaluation, Advanced Guidance Methodology, Missile Guidance Systems and Analysis Techniques.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A075 198

22/2

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OH

Artificial Heavenly Palaces.

JUN 79 14P Tain,Shu :  
REPT. NO. FTD-ID(RS)T-0610-79

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited trans. of Hang K'ung Chih  
Shih (China) n12 p27-29 1978, by Fang-Ling  
Needham.DESCRIPTORS: \*Space stations, Foreign technology,  
Fabrication, Translations, China

Artificial Heavenly Palaces--Translation.

(U)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A070 634

9/2

22/2

IBM FEDERAL SYSTEMS DIV HOUSTON TX

Department of Defense Space Transportation  
System Orbiter Avionics Software  
Integration Study. Analysis of Orbiter  
Systems to Meet MASE Requirements.DESCRIPTIVE NOTE: Special study rept. Feb-Apr 79,  
APR 79 61P Ciarnant, L. S. ; Smythe, E.

W. Wolfe, R. H. ; Jr;

REPT. NO. RES-78-11-1

CONTRACT: F04701-76-C-0271

MONITOR: SAMSO TR-79-37

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Space shuttles, \*Data processing,  
Department of Defense, Digital computers,  
Microprocessors, Display systems, Avionics,  
Integrated systems

This study analyzes the use of the Space Shuttle Orbiter data processing subsystems in satisfying requirements for the integral astronaut participation in selected DoD space shuttle experiments. Key aspect of the study was the analysis, based on system implementation, to determine degrees of data protection from unauthorized use. Typical image processing and enhancing techniques versus display response time for astronaut interactions were assessed. The study concluded that a degree of data protection is achieved with the present orbiter avionics system by isolating one of the five general purpose computers with an out-of-sync procedure. Additional levels of data protection could be achieved only with additional hardware. (Author)

(U)

(U)

(U)

AD-A075 198

UNCLASSIFIED

PAGE

3

AD-A070 634

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A070 444 22/2 21/B.2 20/4 20/13

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AFS TN

Aerothermal Evaluation of the Space Shuttle  
Solid Rocket Booster and Solid Rocket  
Motor Thermal Protection System.

(U)

DESCRIPTIVE NOTE: Final rept. Dec 77-Jan 79,  
MAR 79 63P Ievalts, John O. ; Spinetti,  
Robert L. ;  
REPT. NO. AEDC-TSR-79-V12

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO,  
Inc., Tullahoma, TN.  
DESCRIPTORS: \*Space shuttles, \*Booster rocket  
engines, \*Aerodynamic heating, Solid propellant  
rocket engines, Thermal insulation, Heat transfer,  
protuberances, Survival(General), Flight  
simulation, Wind tunnel tests, Data bases,  
Calibration

IDENTIFIERS: LPN-ARO-V41C-V9  
(U)  
(U)

Samples of insulation materials under consideration  
for use on the various protuberances of the Space  
Shuttle Solid Rocket Boosters and Solid  
Rocket Motors were tested to evaluate their  
survivability at simulated flight heating levels.  
Heat transfer calibration data were obtained by use  
of the thin-skin technique on several protuberance  
configurations. All tests were conducted in the  
VKF Tunnel C.

(U)

AD-A070 444

UNCLASSIFIED

PAGE

4

AD-A070 443

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A070 443 22/2 20/4 20/13

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AFS TN

Space Shuttle External Tank Instrumentation  
Evaluation.

(U)

DESCRIPTIVE NOTE: Final rept.,  
FEB 79 33P Stallings, D. W. ;  
REPT. NO. AEDC-TSR-79-V11

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO,  
Inc., Tullahoma, TN.  
DESCRIPTORS: \*Space shuttles, \*External stores,  
\*Instrumentation, Ablative materials, Thermal  
insulation, Hypersonic flow, Aerodynamic loading,  
Heat transfer, Pressure distribution, Flow fields,  
Aerodynamic heating, Wind tunnel tests, Flight  
simulation, Pressure transducers, Microphones,  
Calorimeters

IDENTIFIERS: LPN-ARO-V41C-62  
(U)  
(U)

Data were obtained on the performance of space  
shuttle flight instrumentation under simulated flight  
conditions. These conditions included ablating  
insulation material. The tests were conducted at a  
free-stream Mach number of 10 and tunnel stilling  
chamber conditions of 1800 psia and 1900 R.  
(Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A070 442 22/2 20/4

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AFS TN

Data Verification Tests of a 0.03-Scale NASA  
Space Shuttle Launch Vehicle at Mach  
Numbers from 0.60 to 1.55.

(U)

DESCRIPTIVE NOTE: Final rept.,

NOV 78 51P Black, J. A. ; Graham, R.

E. ;

REPT. NO. AEDC-TSR-78-P54

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARD,  
Inc., Tullahoma, TN.  
DESCRIPTORS: \*Launch vehicles, \*Space shuttles,  
\*Aerodynamic characteristics, Scale models, Flow  
fields, Angular motion, Angle of attack, Sideslip,  
Roll, Elevons, Deflection, Data bases,  
Corrections, Wind tunnel tests (U)  
IDENTIFIERS: PE65807F, LPN-ARO-P41T-35 (U)

A 0.03-scale model of the NASA Space Shuttle  
Launch Vehicle was tested September 19-20 and  
September 29-30, 1978, in the Propulsion Wind  
Tunnel (16T) at free-stream Mach numbers from  
0.60 to 1.55, free-stream dynamic pressures from  
387 to 658 psf, angles of attack from -8 to 8 deg, angles  
of sideslip from -6 to 6 deg, and roll angles of 0,  
180, 90, and -90 deg with nominal inboard elevon  
deflections of 10 deg and outboard elevon deflections  
of 5 deg. The objectives of the test were to  
determine flow angularity on the standard sting  
support system (first entry) and high-pitch support  
system (second entry), and to provide data throughout  
an alpha/beta matrix, and to provide a data base for the  
determination of angular corrections to be applied to  
previously obtained data if such corrections are  
necessary. (Author) (U)

AD-A070 442

UNCLASSIFIED

PAGE

5

AD-A069 194

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A069 194 22/2 20/4

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AFS TN

Data Verification Tests of a 0.02-Scale NASA  
Space Shuttle Launch Vehicle at Mach  
Numbers from 0.60 to 1.55.

(U)

DESCRIPTIVE NOTE: Final rept.,

FEB 79 49P Black, J. A. ;

REPT. NO. AEDC-TSR-79-P7

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARD,  
Inc., Tullahoma, TN.  
DESCRIPTORS: \*Space shuttles, \*Launch vehicles,  
\*Booster rocket engines, Fuel tanks, External  
stores, Expendable, Scale models, Wind tunnel  
tests, Aerodynamic characteristics, Pitch(Motion),  
Sideslip, Corrections, Angular acceleration,  
Data bases, Experimental data, Aerodynamic force  
IDENTIFIERS: LPN-ARO-P41T-B1 (U)  
(U)

A 0.02-scale model of the NASA Space Shuttle  
Integrated Launch Vehicle was tested November  
15 and 16, 1978 in the Propulsion Wind Tunnel  
(16T) at free-stream Mach numbers from 0.60 to  
1.55, free-stream dynamic pressures from 388 to 658  
psf, angles of attack from -8 to 8 deg, angles of  
sideslip from -6 to 6 deg, and roll angles of 0, 180,  
-90, and 90 deg with nominal inboard elevon  
deflections of 10 deg and outboard elevon deflections  
of 5 deg. The objectives of the test were to  
determine applicable angular corrections in the pitch  
and sideslip planes and to establish, throughout an  
alpha/beta matrix, a data base for the determination  
of angular corrections to be applied to previously  
obtained data. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A069 127 13/2 21/2 1/3

CALIFORNIA UNIV LIVERMORE LAWRENCE LIVERMORE LAB

Annual Report of the Lawrence Livermore Laboratory to the FAA on the High Altitude Pollution Program-1978.

SEP 78 56P Luther, Frederick M. ;  
REPT. NO. UCRL-50042-78  
CONTRACT: DOT-FA76WAI-653  
MONITOR: FAA-AEE 79-04

(U)

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Air pollution, \*Aircraft exhaust, \*Supersonic transports, Ozone layer, Stratosphere, Emission, Space shuttles, Nitrous oxide, Reports, Ozone, Simulation, Solar radiation  
IDENTIFIERS: Lawrence Livermore Laboratory,  
High altitude pollution

(U)

(U)

This report discusses the research done at Lawrence Livermore Laboratory in the area of numerical modeling of the atmospheric response to stratospheric perturbations. The one-dimensional transport-kinetics model was used to simulate observed stratospheric variations and for several assessment studies. The effects of a solar eclipse on stratospheric chemistry have been modeled along with the possible variations due to the 11-year solar cycle. Assessment studies included: potential changes in ozone due to SST and Space Shuttle emissions, chlorofluoromethane and N2O releases, solar power satellite launch vehicle emissions, and massive pulse injections of NOx into the stratosphere. Other studies include the potential effects of stratospheric perturbations on the earth's radiation budget and the resultant climatic implications, and the effect of ozone reductions on erythema dose. Changes to the one-dimensional transport-kinetics model during the past year are included in an appendix along with a listing of the chemical reactions and species used in the model.  
(Author)

(U)

AD-A069 127

UNCLASSIFIED

PAGE

6

AD-A066 278

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A066 278 22/2

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

Space Shuttle,

(U)

AUG 78 14P Gen, Ling Fu ;  
REPT. NO. FTC-ID(RS)T-0759-78

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited trans. of Hang K'ung Chih Shih (China) n11 p7-10 1977, by Jerry K. Chung.

DESCRIPTORS: \*Space shuttles, Space transportation, Reusable equipment, Space missions, Payload, Space maintenance, Translations, China

(U)

Space Shuttle--Translation.

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A066 247 14/2 22/2 13/13

GENERAL ELECTRIC CO PHILADELPHIA PA SPACE DIV

Standard Test Rack. Concept Definition  
Study. Structural Analysis Report.

(U)

DESCRIPTIVE NOTE: Final rept. 19 Jul-1 Nov 78.  
JAN 79 125p  
CONTRACT: F04701-77-C-0116  
MONITOR: SAMSO TR-78-146

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Test facilities, \*Space shuttles,  
\*Structural analysis, \*Stress analysis, Payload,  
Structures, Structural response, Structural  
engineering, Space technology, Vibration,  
Frequency, Damping, Acceleration, Computerized  
simulation  
IDENTIFIERS: Standard test racks, Test racks,  
NASTRAN computer program

(U)

(U)

DoD Standard Test Rack Structural/Dynamic  
Analysis for critical loading conditions. NASTRAN  
converter model developed for coupled STS/STR  
Transient analysis high payload weight capability of  
STR investigated. (Author)

(U)

AD-A066 247

UNCLASSIFIED

PAGE

7

AD-A065 866

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A065 866 22/2 22/1

AEROSPACE CORP EL SEGUNDO CA ADVANCED PROGRAMS DIV

Five Year Plan for Space Test  
Program.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Jan-28 Aug 78,  
AUG 78 181p Wang, H. E. Frank ; Knauss,  
R. G. ; Underwood, R. E. ; Weeks, L. H. ;  
REPT. NO. TOR-0078(3506-01)-1  
CONTRACT: F04701-77-C-0078

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Space shuttles, \*Space technology,  
Planning programming budgeting, Space stations,  
Military applications, Military planning, Payload,  
Space missions, Space exploration, Space  
maintenance, Space transportation, Military  
satellites, Scientific satellites, Space  
environments

(U)

(U)

IDENTIFIERS: Space test program

Examined available systems, services, and test  
methods afforded by the Shuttle to conduct space  
experiments. Assumed pathfinder role for DoD  
towards the full utilization of the Shuttle by  
developing (1) Common Support Equipment  
for astronaut assisted sortie flights, and (2)  
cost effective approaches for primary and secondary  
free-flying spacecraft. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A065 480 9/2 22/2

UNG (MAN T) EL SEGUNDO CALIF

Space Shuttle Digital Computer Simulation  
Benchmark.

(U)

DESCRIPTIVE NOTE: Final rept.,  
DEC 78 172P Ung, Man T.;  
CONTRACT: F04700-78-M-2539  
MONITOR: AFFTC TR-78-30

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Computerized simulation, \*Flight  
testing, \*Space shuttles, Acceptance tests, Flight  
simulation, Computer program verification,  
Specifications, Flight control systems, Digital  
systems, Equations of motion, FORTRAN, Computer  
programs, Flow Charting  
IDENTIFIERS: PE65907F

(U)  
(U)

This report was produced to serve as the benchmark  
to be used during the acceptance test for the  
Simulator for Flight Test and Development  
(SAFTD) at Edwards AFB. Afterwards, the  
document will be used to train new engineers to use  
the simulator. The writing is tutorial in nature  
and it stresses the orderly organization of a  
computer flight simulation. Model validation is  
explained in terms of static and dynamic checks.  
The report is not intended to arrive at any  
operational conclusion or new discoveries. This  
Space Shuttle Simulation, which is aimed at  
training and contractual acceptance of procured  
hardware, is different from the AFFTC Office of  
Advanced Manned Vehicles' Space Shuttle  
Simulation, which is used to support Shuttle  
development and flight testing. (Author)

(U)

AD-A065 480

UNCLASSIFIED

PAGE

8

AD-A065 097

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A065 097 22/2

GENERAL ELECTRIC CO PHILADELPHIA PA SPACE DIV

Standard Test Rack Concept Definition  
Study, Manned Interface Definition.

(U)

DESCRIPTIVE NOTE: Final rept. 19 Jul-1 Nov 78,  
JAN 79 110P Gross, Murray;  
CONTRACT: F04701-77-C-0116  
MONITOR: SAMSO TR-78-145

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Test stands, \*Space shuttles,  
Missions, Manned spacecraft, Payload, Control,  
Automation, Ground support, Requirements

(U)

DoD Standard Test Rack Manned Interface  
Definition for Shuttle Sortie Flight  
Operations for typical COD experiments and  
tests in orbit. Includes ground-based, orbital and  
automated control approaches. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A064 773 22/2 22/1

GENERAL ELECTRIC CO PHILADELPHIA PA SPACE DIV

Standard Test Rack Exploitation Study. (U)

DESCRIPTIVE NOTE: Final rept. 7 Jul-31 Dec 77,

DEC 77 402P Engle, William P. ;

CONTRACT: FO4701-77-C-0116

MONITOR: SAMSO TR-77-190

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Space transportation, \*Space shuttles, \*Space stations, Payload, Test beds, Test fixtures, Modular construction, Reusable equipment, Configurations, Test equipment, Standardization, Space technology, Military research, Space missions (U)

IDENTIFIERS: Standard test racks, PE63402F (U)

The Standard Test Rack (STR), designed to handle a wide variety of experiments and operational payloads, can fly on the space shuttle with a minimum of lead time and within a small space envelope. It is configured to use left-over space including fitting around the space lab tunnel. Minimum interface with the shuttle support systems provides ability for quick reaction installation on a space availability basis. (Author) (U)

AD-A064 773

UNCLASSIFIED

PAGE

9

AD-A064 766

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A064 766 22/2 22/1 5/1

TRW DEFENSE AND SPACE SYSTEMS GROUP REDONDO BEACH CALIF

STS Utilization Study Experiment Assessments. (U)

DESCRIPTIVE NOTE: Technical operating rept. 30 Jun-30 Dec 77.

DEC 77 309P

REPT. NO. TRW-31933-6001-RU-00

CONTRACT: FO4701-77-C-0112

MONITOR: SAMSO TR-77-188

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Space transportation, \*Space shuttles, \*Space stations, Test beds, Space missions, Space technology, Military applications, Research management, Department of Defense, Payload, Utilization, Military research, Planning programming budgeting (U)

A study was performed to identify those experiments from DoD laboratories that will be able to use the Space Transportation System (STS). Applicable experiments were assessed to determine the most effective carrier system within the STS. Design suggestions were made to improve experiment compatibility with the STS. The report describes the study, includes the experiment assessments and data on payload accommodation capability of elements of the STS. It is concluded that a considerable amount of DoD space flight experimentation can be projected for the STS flight era. Most experiments will require one of the payload carriers, now under development, to interface with the Orbiter. Many will require the use of special flight support equipment such as a pointing system. In a specific area, it was found that there is basic materials research within DoD that might benefit from space experimentation. (Author) (U)

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A064 681 22/2

TRW DEFENSE AND SPACE SYSTEMS GROUP REDONDO BEACH  
CALIF

STS Utilization Study. (U)

DESCRIPTIVE NOTE: Final rept. 30 Jun-30 Dec 77.

DEC 77 61P

REPT. NO. TRW-31933-6002-RU-00

CONTRACT: F04701-77-C-0112

MONITOR: SAMSO TR-77-189

UNCLASSIFIED REPORT

DESCRIPTORS: \*Space transportation, \*Space shuttles,  
Military equipment, Military research, Space  
environments, Military requirements, Space flight,  
Compatibility

IDENTIFIERS: Space testing

(U)  
(U)

A study was performed to identify those experiments from DoD laboratories that will be able to use the Space Transportation System (STS). Applicable experiments were assessed to determine the most effective carrier system within the STS. Design suggestions were made to improve experiment compatibility with the STS. The report describes the study and includes examples of the experiment assessments. It is concluded that a considerable amount of DoD space flight experimentation can be projected for the STS flight era. Most experiments will require one of the payload carriers, now under development, to interface with the Orbiter. Many will require the use of special flight support equipment such as a pointing system. In a specific area, it was found that there is basic materials research within DoD that might benefit from space experimentation. (Author)

(U)

AD-A064 681

UNCLASSIFIED

PAGE

10

AD-A063 248

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A063 248 22/2

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

Space Shuttle, (U)

NOV 78 14P Ling-Fu-Keng ;  
REPT. NO. FTC-ID(RS)T-1545-78

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited trans. of Hang K'ung Chin  
Shih (China) n11 p7-10 Nov 77.  
DESCRIPTORS: \*Space shuttles, Landing fields,  
USSR, United States, Rocket launching,  
Reusable equipment, Space flight, Costs,  
Reduction, Flight control systems, Solid rocket  
fuels, Booster rocket engines, Translations,  
China

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A063 077 13/10.1

NAVAL OCEAN SYSTEMS CENTER SAN DIEGO CA

A Remote, Unmanned Dewatering System for Recovery of the Solid Rocket Booster of the Space Shuttle Program.

(U)

DESCRIPTIVE NOTE: Research and development technical rept.

AUG 75-JUN 77,

AUG 77 18P

REPT. NO. NOSC/TR-144 Schlosser, A. J. ;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Underwater vehicles, \*Recovery, \*Booster rocket engines, Underwater, Remote control, Water, Removal, Space shuttles, Launching, Cables

(U)

IDENTIFIERS: CURVE(Cable Controlled Underwater Recovery Vehicles)

(U)

The design, fabrication, and testing of a prototype system for dewatering the Solid Rocket Boosters recovered after launch of the NASA Space Shuttle Vehicle are described. A summary of operations conducted with unmanned underwater recovery vehicles (the CURV) provides the background for the development of the design concepts embodied in the dewatering system. (Author)

(U)

AD-A063 077

UNCLASSIFIED

PAGE

11

AD-A062 377

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A062 377 22/2 20/4

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AFS TN

Effects of Vertical Tail Flexibility on the Aerodynamic Characteristics of a 0.03-Scale NASA Space Shuttle Orbiter at Mach Numbers from 0.90 to 1.55.

(U)

DESCRIPTIVE NOTE: Final rept.,

AUG 78 29P

REPT. NO. AECC-TSR-78-P29 Black, J. A. ;

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARQ, Inc., Tullahoma, TN.

DESCRIPTORS: \*Space shuttles, \*Vertical stabilizers, \*Aerodynamic characteristics, Dynamic pressure, Wind tunnel tests, Scale models, Static loads, Flexible structures, Experimental data

(U)

IDENTIFIERS: Orbiter vehicles, LPN-ARO-P41T-

(U)

34

A 0.03-scale model of the NASA Space Shuttle Orbiter utilizing a flexible and a rigid vertical tail was tested in the Propulsion Wind Tunnel, Transonic (16T) at free-stream Mach numbers from 0.90 to 1.55, free-stream dynamic pressures from 300 to 700 psf, angles of attack from -2 to 12 deg and angles of sideslip from -5 to 9 deg for speedbrake deflections of 25 and 55 deg, and rudder deflections of 0 and 10 deg. The objective of the test was to determine the effects of vertical tail flexibility on the static stability and control characteristics of the Orbiter vehicle.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A061 036 22/2 22/1

AEROSPACE CORP EL SEGUNDO CALIF

Shuttle Impact on Communications Satellites  
as Seen from the User Viewpoint.

(U)

DESCRIPTIVE NOTE: Technical rept.,

OCT 77 27P Meyer, Henry ;

REPT. NO. TR-0078(3724-01)-3

CONTRACT: F04701-77-C-0078

MONITOR: SAMSO, GIDEP TR-78-28, E134-0876

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Space shuttles, Communication  
satellites, Space transportation, Payload, Cost  
analysis, Launch vehicles, User needs

(U)

The impact of the Space Transportation System (STS) on communication satellites during and beyond the transition period for civilian and military projects is examined. The 15-ft diameter by 60-ft long shuttle cargo bay, its 65,000-lb east launch payload capability, and use of either solid spinning perigee kick systems or the interim upper stage (IUS) constitute the elements that may permit economical use of the STS by payload sharing of the cargo bay. A measure of spacecraft growth in weight and capability plus changes in configuration for STS adaptation can be expected. Profitable cargo bay length utilization and mixed payload integration planning will be some of the most important issues to be resolved. (Author)

(U)

AD-A061 036

UNCLASSIFIED

PAGE

12

AD-A060 462

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A060 462 22/1 22/4

SPACE AND MISSILE SYSTEMS ORGANIZATION LOS ANGELES  
CALIFEnvironmental Impact Analysis Process.  
Environmental Impact Statement Space  
Shuttle Program Vandenberg AFB,  
California.

(U)

DESCRIPTIVE NOTE: Final rept.  
JAN 78 629P

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Original contains color plates:  
All DDC reproductions will be in black and white.  
DESCRIPTORS: \*Environmental impact statements,  
\*Environments, Space transportation, Manpower,  
Topography, Geomorphology, Geology, Water  
resources, Water quality, Tables(Data), Energy  
conservation, Construction

(U)

The proposed action comprises construction,  
activation, and operation of Space Shuttle  
facilities at Vandenberg Air Force Base  
(VAFB) and Port Hueneme harbor, California.

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 796 22/2 20/4 20/13

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AFS TN

Infrared and Phase-Change Paint  
Measurements of Heat-Transfer on the Space  
Shuttle Orbiter.

(U)

DESCRIPTIVE NOTE: Final rept.,  
JUN 78 70P Stallings, D. W. ; Carver, D.B. ;  
REPT. NO. AEDC-TSR-78-V13  
PROJ: 921E  
TASK: 01

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARD, Inc., Tullahoma, TN.

DESCRIPTORS: \*Space shuttles, \*Aerodynamic heating, \*Heat transfer, Artificial satellites, Orbits, Model tests, Infrared scanning, Phase transformations, Optical coatings, Reynolds number, Free stream, Insulation, Flight simulation, Wind tunnels, Boundary value problems, Test facilities, Test equipment

(U)

IDENTIFIERS: LPN-ARO-V41B-P4A, LPN-ARO-V41B-K7A, PE02202F

(U)

These tests were part of a large program to evaluate the effects of aerodynamic heating on the Space Shuttle Orbiter. The MA-29 test was a blockage study conducted to determine the maximum allowable model size for OH-90. The OH-90 test was specifically designed to study boundary layer transition on the lower surface of the orbiter wing. Gaps and steps in the wing insulation material were simulated to determine the effect of such irregularities on the state of the boundary layer. The final test shift of the OH-90 entry was done in support of the Rockwell OH-103 project. An orbiter forebody model was used to obtain detailed heat-transfer rate data on the forward 20 percent of the 140C Space Shuttle Orbiter configuration.

(U)

AD-A059 796

UNCLASSIFIED

PAGE

13

AD-A059 497

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A059 497 22/2 20/13

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AFS TN

Heat Transfer Test on the NASA/Rockwell  
International Space Shuttle Orbiter at Mach  
number 8.0 in AEDC/VKF Tunnel B.

(U)

DESCRIPTIVE NOTE: Final rept. 20 Feb-27 Apr 78,  
JUN 78 65P Knox, E. C. ;  
REPT. NO. AEDC-TSR-78-V10

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARD, Inc., Tullahoma, TN.

DESCRIPTORS: Space shuttles, Heat transfer, Scale models, Hypersonic wind tunnels, Heat flux, Turbulent boundary layer, Angle of attack, Reynolds number, Sweptback wings, Skin friction, Skin(Structural), Mach number, Wind IDENTIFIERS: LPN-ARO-V41B-V2

(U)

(U)

Heat-transfer data were obtained on a 0.0175-scale and on a 0.04-scale model of the NASA/Rockwell International Space Shuttle Orbiter. The data were obtained at mach 8 in the AEDC/VKF Tunnel B at angles of attack from 25 to 42.5 deg and at several free-stream Reynolds numbers from 500,000 to 3,700,000 per ft. (Author)

(U)

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A058 693 20/13 22/3 20/4

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENNHeat-Transfer Tests on the Nose of the  
Shuttle Orbiter External Tank (FH-  
15).

(U)

DESCRIPTIVE NOTE: Final rept.,

JUN 78 44P Carver, D. B.; Boylan, D.

E. i.

REPT. NO. AEDC-TSR-78-V11

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO,  
Inc., Tullahoma, TN.DESCRIPTORS: \*Heat transfer, \*Space shuttles,  
Atmosphere entry, Nose tips, Thermocouples,  
Aerodynamic heating, Supersonic wind tunnels, Wind  
tunnel models, Supersonic flow, Data reduction  
IDENTIFIERS: LPN-ARD-V41A-20 (U)  
(U)

Aerodynamic heating tests were conducted using a  
0.0275-scale model of the space shuttle external tank  
nose to obtain detailed heat-transfer distributions.  
Special emphasis was placed on evaluating  
interference heating around the forward fairing,  
trays and gaseous oxygen line and brackets. The  
thin-skin thermocouple technique was used, and data  
were obtained at Mach numbers 3.4, and 5.5 at  
(free-stream Reynolds numbers of 3.7 and 5.0  
million per ft. Model angle of attack was 0, and +  
or - 5 deg, with sideslip angles from -11 to +11  
deg. (Author)

(U)

AD-A058 693

UNCLASSIFIED

PAGE

14

AD-A058 141

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A058 141 22/2

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENNTest Results from the NASA/Rockwell  
International Space Shuttle Integrated  
Vehicle Test (IH 85) Conducted in the  
AEDC-VKF Tunnel A.

(U)

DESCRIPTIVE NOTE: Final rept.,

JUN 78 44P Nutt, Kenneth W. ;

REPT. NO. AEDC-TSR-78-V15

PROJ: 921E

TASK: 01

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO,  
Inc., Tullahoma, TN.DESCRIPTORS: \*Space shuttles, \*Wind tunnel tests,  
\*Aerodynamic heating, Scale models, Wind tunnel  
models, Convection (Heat transfer), Scaling  
factors, Supersonic flight, Angle of attack, Yaw,  
Configurations, Tables (Data)  
IDENTIFIERS: LPN-ARD-V41A-W5 (U)  
(U)

Tests were conducted to obtain convective heat-  
transfer-rate distributions on the Space Shuttle  
Integrated Vehicle during simulated first and  
second stage conditions of the flight profile. The  
test model was a 0.0175-scale model (60-QTS).  
Model configurations tested included the  
Integrated Vehicle and the Orbiter/External  
Tank with the Solid Rocket Boosters removed.  
The tests were conducted at Mach numbers 3 and 4  
using the thin-skin thermocouple technique. The  
model was tested at angles of attack of 0, + or -  
2.5, and + or - 5 deg and at yaw angles of 0, +  
or - 3, + or - 4.5, + or - 5, + or - 7.5, and  
+ or - 9 deg. A test description is presented.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A057 080 22/2 20/4

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

NASA/R1 OA 208 and 209 Verification Static-Stability and Control-Effectiveness Tests of the Space Shuttle Orbiter Vehicle at Mach Numbers from 2 to 8.

DESCRIPTIVE NOTE: Final rept.,  
JUN 78 47P Jordan, J. L. ;  
REPT. NO. AEDC-TSR-78-V6

(U)

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO, Inc., Tullahoma, TN.

DESCRIPTORS: \*Space shuttles, \*Aerodynamic stability, \*Wind tunnel tests, Attitude control systems, Flight control systems, Supersonic flow, Mach number, Reynolds number, Free stream, Angle of attack, Flow fields, Sideslip, Schlieren photography, Flow visualization  
IDENTIFIERS: LPN-ARO-V41A/B-P5

(U)  
(U)

Static force tests were conducted on a 0.02-scale high-fidelity Space Shuttle Orbiter Vehicle model (SSV 102 Orbiter configuration, model 105-0) across the Mach number range from 2 to 8. Test data were obtained to verify orbiter stability and control characteristics in pitch and yaw, and to verify control effectiveness and trim limits over this Mach number range. Data were acquired from Mach 2.0 to 5.5 in increments of 0.5 at a primary free-stream unit Reynolds number of 4.5 million per ft. Data were also taken at Mach 8.0 at a primary free-stream unit Reynolds number of 2.3 million per ft. Data were obtained in the angle-of-attack range of -1 to 51 deg and the angle-of-sideslip range of -10 to +10 deg. Orbiter speedbrake, rudder, elevator, aileron, and body flap deflections were varied manually during the tests. Model flow-field photographs were obtained at various pitch and sideslip angles.

(U)

AD-A057 080

UNCLASSIFIED

PAGE

15

AD-A056 109

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A056 109 22/3

AEROSPACE CCRP EL SEGUNDO CALIF GUIDANCE AND CONTROL DIV

Station Keeping of the Space Shuttle in the Vicinity of a Deployed Payload.

(U)

DESCRIPTIVE NOTE: Interim rept.,  
MAY 78 27P Fey, Wayne A. ;  
REPT. NO. TR-0078(3451-03)-1  
CONTRACT: F04701-77-C-0078  
MONITOR: SAMSO, GIDEP TR-78-102.E132-2196

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Stationkeeping, \*Space shuttles, \*Orbits, Visual inspection, Payload, Deployment, Checkout procedures, Line of sight, Separation, Range(Distance), Flight maneuvers, Parking orbit trajectories, Elliptical orbit trajectories  
IDENTIFIERS: Space shuttle orbiters

(U)  
(U)

It is desirable for the Orbiter of the Space Shuttle to remain in the vicinity of a payload after it is deployed in orbit to allow for visual inspection. A station keeping mode at constant distance from the payload (as limited by safety considerations) was devised. Examples of other station keeping modes are presented: the maximum distance from the payload tends to be substantially in excess of the minimum. In all cases, station keeping orbits are planar ellipses relative to the payload. The adequacy of visual inspection of the payload depends on the attitude control mode of the payload, the station keeping orbit, and the line of sight required relative to the payload surface. Multiple station keeping orbits or commanded rotation of the payload may be required for adequate visibility. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A055 465 22/2 17/7 12/1 9/2

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

A Kalman Filter Design for the Space Shuttle Orbiter Inertial Measuring Unit During Descent/Reentry Using Global Positioning System Satellite Information.

(U)

DESCRIPTIVE NOTE: Master's thesis,

REPT. DEC 77 183P Van Liere, Dennis A. ;

PROJ: 7071

TASK: 00

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Space shuttles, \*Global positioning system, \*Kalman filtering, \*Inertial navigation, Descent trajectories, Mission profiles, Space missions, Digital simulation,

Performance(Engineering), Error analysis,

Accuracy, Theses

IDENTIFIERS: PE61102F, WUAFIT70710012

(U)

(U)

This report studies three Kalman Filter implementations for the deorbit/reentry phase of a Space Shuttle Orbiter mission profile. Each design uses measurements from Global Positioning System satellites to update Kalman Filter estimates of selected error states and to bound the Shuttle's INS error growth. Covariance analysis techniques are used to compare the performances of 17-state, 11-state, and 8-state filter designs using a digital computer simulation of a NASA DFT-1 Space Shuttle mission trajectory. A 73-state truth model of the Space Shuttle IMU, the Orbiter GPS receiver Master Tuning Unit, and the GPS satellite constellation is used as a system simulation to examine the performance of the design filters. The results are shown primarily in the form of computer-generated plots of both filter indicated errors and true system errors versus time. It is concluded from the results that an 8-state filter design is able to perform well enough to be a primary candidate for design implementation, and also that further refinements are necessary in the user clock model of the design Kalman Filter.

(U)

AD-A055 465

## UNCLASSIFIED

PAGE

16

AD-A053 214

## UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A053 214 6/16 22/1

AIR FORCE GEOPHYSICS LAB HANSCOM AFB MASS

Role of Nuclear Stars in the Light Flashes Observed on Skylab 4,

(U)

77 9P

C. ; Rothwell, P. L. ; McNulty, P. J. ; Filz, R.

REPT. NO. AFGL-TR-78-0087

PROJ: 2311

TASK: G1

## UNCLASSIFIED REPORT

Availability: Pub. in CCSPAR - Life Sciences and Space Research, v15 p129-134 1977.

DESCRIPTORS: \*Visual perception, \*Flashes, \*Space stations, High density, Anomalies, South Atlantic Ocean, Nuclear particles, Particle collisions, Retina, Reprints

IDENTIFIERS: PE61102F, WUAFGL2311G102

(U)

(U)

The astronauts on Skylab 4 observed bursts of intense visual light-flash activity when their spacecraft passed through the portion of the earth's inner trapped radiation belt known as the South Atlantic Anomaly (SAA). Two experimental sessions were carried out on board Skylab 4 to compare the flash rates with the measured flux of Z > or = particles that would pass through the astronaut's eyes. It was concluded that the flash rates, which became as great as 20/min. were anomalously high. A number of alternative explanations for the anomalous flash rates that would be consistent with the accepted SAA flux values and the laboratory data on particle induced visual sensations and found that when one includes the effect of nuclear interactions in and near the retina which result in star formation (the emission of slow protons, neutrons and alpha particles from the nucleus in an evaporation-like process) the apparent anomaly is removed.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A053 213 6/16 22/1

## AIR FORCE GEOPHYSICS LAB HANSCOM AFB MASS

## Particle Induced Visual Phenomena in Space, (U)

MAR 77 5P McNulty, J. P.; Pease, V.  
P.; Bond, V. P.; Filiz, R. C.; Rothwell, P.  
L.:

REPT. NO. AFGL-TR-78-0086  
PROJ: 2311  
TASK: G1

## UNCLASSIFIED REPORT

Availability: Pub. in Radiation Effects, v34  
p153-156 1977.

SUPPLEMENTARY NOTE: Presented at the International  
Conference on Solid State Nuclear Trade  
Detectors, Neuberberg/Munich Oct 76.

DESCRIPTORS: \*Visual perception, \*Flashes, \*Space  
stations, Threshold effects, Retina, Nuclear  
particles, Particle collisions, Reprints  
IDENTIFIERS: PE8102F, WUAFGL2311G102 (U)  
(U)

There have been a large number of laboratory experiments on particle induced visual sensations which have resulted in a variety of visual phenomena that are similar in appearance to the so-called light flashes described by astronauts on Apollo missions 11 through 17 and Skylab 4. Unfortunately, no direct comparison of the laboratory and space observations have been made by observers who have experienced both. More than one physical mechanism has been shown to be involved in the laboratory phenomena and presumably in the space observations also. A number of models for particle induced visual phenomena are described and a quantitative estimate of their contribution to the space observations is attempted. (Author) (U)

AD-A053 213

UNCLASSIFIED

PAGE

17

AD-AC50 761

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A050 761 22/2 5/1 5/3

ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT  
NEUILLY-SUR-SEINE (FRANCE)

## AGARD Highlights. (U)

MAR 77 55P  
REPT. NO. AGARD-HIGHLIGHTS-77/1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Military research, \*Aerospace systems,  
Research management, Periodicals, NATO, Space  
transportation, Space shuttles, Turkey, Research  
management, Economic analysis, Foreign  
technology  
IDENTIFIERS: NATO furnished (U)  
(U)

This issue highlights the AGARD annual meeting in  
Istanbul, Sep 76. Articles on the following  
topics are included: Issues of Science  
Policy in Turkey; Space Transportation  
System; and Economics of Research and  
Development Expenditures and Technical  
Progress. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A049 177 6/6 6/3 22/4

CIVIL AND ENVIRONMENTAL ENGINEERING DEVELOPMENT OFFICE  
TYNDALL AFB FL DETACHMENT 1 (ADTC)Impact of Space Shuttle Support Facilities  
Construction on Special Interest Plant  
Species (Vandenberg AFB, Ca).

(U)

DESCRIPTIVE NOTE: Final rept. Jun-Sep 77.

SEP 77 61P Wooten, R. C., Jr.; Strutz,

Dennis; Hudson, Ronald;

REPT. NO. CEED-TR-77-33

PROJ: 2103

TASK: 9

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Ecology, \*Plants(Botany), \*Air  
Force facilities, \*Environmental impact statements,  
Vegetation, Extinction, Threat evaluation, Space  
shuttles, Ground support, Sites, Construction,  
Environmental protection (U)IDENTIFIERS: Vandenberg Air Force Base,  
WUCEED021039P13, PE63723F (U)

This report summarizes the results and conclusions of studies conducted to evaluate the impact of ground support facility construction for the Space Shuttle program at Vandenberg AFB, California on listed and proposed threatened or endangered plant species in order to comply with the Endangered Species Act of 1973. Vegetation surveys were made in proposed construction site areas. The listing used to determine threatened and endangered plant taxa were those plant species proposed as endangered or threatened in the 1975 Federal Register (40FR27824-27890) and those listed as endangered for rulemaking by the US Fish and Wildlife Service in the June 16, 1976 Federal Register (41FR24524-24572). The surveys also included other special interest taxa designated by the California Native Plant Society as being rare, endangered, or vascular plants of limited distribution in California. Three threatened species (*Castilleja mollis*, *Monardella crispata*, and *Scrophularia atrata*) and two endangered species (*Cirsium phothophilum* and *Eriogonum foliosum* var *blochmanae*) were found in a number of the construction site areas. (U)

AD-A049 177

## UNCLASSIFIED

PAGE

18

AD-AC46 210

## UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A046 210 11/3 22/2

AIR FORCE MATERIALS LAB WRIGHT-PATTERSON AFB OHIO

Results of the Polymeric Films Skylab D024  
Experiment.

(U)

DESCRIPTIVE NOTE: Technical rept. Jan 68-Oct 74,  
AUG 75 16P Lehn, William L.; Hurley,

Charles J.;

REPT. NO. AFWL-TR-75-165

PROJ: 7349

TASK: 07

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the AIAA Thermophysics  
Conference (10th), 27-29 May 75, Denver, CO.  
AIAA Paper no. 75-689.DESCRIPTORS: \*Polymeric films, \*Space stations,  
\*Protective coatings, Thermal stability,  
Exposure(General), Recovery, Containers,  
hermetic seals, Optical properties, Physical  
properties, Electrical properties, Contamination,  
Degradation, Solar radiation, Extravehicular  
activity, Polyimide resins, Mass spectroscopy  
IDENTIFIERS: \*Skylab, WUAFML73400703,  
PE62102F (U)

Results of an experiment designed to evaluate the effects of the near earth environment on the performances and properties of selected polymeric films were exposed to the Skylab space environment for varying periods of time during the mission. The individual specimen holders were retrieved during EVA by the Astronauts, placed in hermetically sealed containers, recovered and returned to the Air Force Materials Laboratory for analysis and evaluation. Post flight analysis of the three sets of recovered polymeric films indicated measured changes in the optical, physical and electrical properties were due to a combination of excessive contamination, solar degradation of the contaminant layer and degradation of the polymer film materials. The degree of contamination experienced compromises the measurement of the degradation of the polymeric film themselves. Experimental results on the analysis of contamination are also presented. (U)

(U)

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A046 208 11/3 22/2

## AIR FORCE MATERIALS LAB WRIGHT-PATTERSON AFB OHIO

SkyLab D024 Thermal Control Coatings and  
Polymeric Films Experiment.

(U)

DESCRIPTIVE NOTE: Technical rept. Jan 68-Oct 74,  
MAR 75 15P Lehn, William L.; Hurley,  
Charles J.;

REPT. NO. AFML-TR-75-77

PROJ: 7340

TASK: 07

MONITOR: GIDEP, GIDEP E046-0915.331.95.37.10-G7-  
01

## UNCLASSIFIED REPORT

## SUPPLEMENTARY NOTE: Presented at the AIAA/AGU

Conference on Scientific Experiments of Skylab, 30  
Oct-1 Nov 74, Huntsville, AL. AIAA Paper no.  
74-1228.

DESCRIPTORS: \*Polymeric films, \*Protective coatings,  
\*Space stations, Thermal resistance,  
Extravehicular activity, Space environments,  
Recovery, Containers, Hermetic seals, Thermal  
properties, Optical properties, Contamination,  
Degradation, Solar radiation, Substrates,  
Artificial satellites, Experimental data

IDENTIFIERS: \*Skylab, \*Thermal control coatings,  
WUAFML73400703, PE62102F

(U)

(U)

Preliminary results of an experiment designed to  
determine the effects of the external Skylab space  
environment on the performance and properties of a  
wide variety of selected thermal control coatings and  
polymeric films are presented. Three duplicate  
sets of thermal control coatings and polymeric films  
were exposed to the Skylab space environment for  
varying periods of time during the mission. The  
specimens were retrieved by the Astronauts, placed  
in hermetically sealed return containers during  
EVA, recovered, and returned to the Air Force  
Materials Laboratory for analysis and evaluation.  
Post flight analysis of the three sets of recovered  
thermal control coatings indicated that measured  
changes in specimen thermooptical properties are due  
to a combination of excessive contamination and solar  
degradation of the contaminant layer.

(U)

AD-A046 208

UNCLASSIFIED

PAGE

19

AD-A046 100

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD-A045 100 22/3 22/2

TRW DEFENSE AND SPACE SYSTEMS GROUP REDONDO BEACH  
CALIF

Department of Defense Space Transportation  
System (OOD/STS) Mission Operations Systems  
Definition Mission Assessment Report:  
Operations Design Mission A.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Oct 76-Sep 77,  
SEP 77 194P Cedeon, G. S.; Owen, J. R.  
; Tomlinson, R. D.;

REPT. NO. TR-26937-6136-TU-00

CONTRACT: F04701-75-C-0025

MONITOR: SAMS0 TR-77-116

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Space missions, \*Space shuttles,  
\*Synchronous satellites, \*Military satellites,  
Equatorial orbits, Mission profiles, Space crews,  
Space communications, Space transportation,  
Department of Defense, Military requirements,  
Scheduling, Satellite tracking systems

(U)

This report presents the results of analysis of a  
near term OOD geosynchronous near equatorial  
payload deployment mission utilizing the Space  
Shuttle Vehicle, in conjunction with an Interim  
Upper Stage (IUS). This issue of the report  
concentrates on development of a nominal mission plan  
for a particular launch date and time. Such items  
as attitude timelines, approximate RCS/DMS  
propellant utilization histories, ground tracks, and  
ground station coverage timelines are included.  
Principal emphasis is placed on development of an  
IUS deployment timeline for near term missions.  
(Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A042 843 22/2 20/4

VIRGINIA POLYTECHNIC INST AND STATE UNIV BLACKSBURG DEPT  
OF AEROSPACE AND OCEAN ENGINEERINGSpace Shuttle Windward Streamline Laminar  
Viscous Shock-Layer Flows at Angle of  
Attack--Comparison of Theory and Experiment,

(U)

MAY 76 93P Murray, Alvin L.; Waskiewicz,  
John D.; Lewis, Clark H.;  
REPT. NO. VPI-AERO-044

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Space shuttles, \*Wind tunnel models,  
\*Laminar boundary layer, \*Viscous flow,  
\*Hypersonic flow, Experimental data, Wind tunnel  
tests, Pressure distribution, Angle of attack,  
Heat transfer, Stagnation temperature, Shock  
waves

(U)

Comparisons have been made between a perfect gas laminar viscous shock layer method and experimental data from the AEDC/vKF Hypersonic Tunnels. The test model was the Rockwell International 139 Shuttle Orbiter, and the data taken included wall pressure distributions, heat-transfer distributions, stagnation temperature and pitot pressure profiles through the shock layer. Comparisons were made at Mach numbers of 8, 11 and 14, with Reynolds numbers ranging from 520,000 to 1.0 x 10 to the 7th power per foot and angles of attack from 0 to 45 degrees. Comparisons showed good to excellent agreement except at very low angles of attack where the axisymmetric solution did not model well the flat bottom of the orbiter.

(U)

AD-A042 843

UNCLASSIFIED

PAGE

20

AD-A041 158

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A041 158 22/2 1/2

NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

A Mathematical Model for the Longitudinal  
Control System of the Space Shuttle  
Orbiter.

(U)

DESCRIPTIVE NOTE: Master's thesis,  
MAR 77 192P Pierce, Cole Jon;

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Space shuttles, \*Attitude control  
systems, Fly by wire control, Orbits, Longitude,  
Orientation (Direction), Feedback, Mathematical  
models, Computerized simulation, Control theory,  
Stability, Response, Computer graphics, Transfer  
functions, Equations of motion, Computer programs,  
Theses

(U)

IDENTIFIERS: Orbits, Characteristic functions,  
IBM 360 computers, HP 9830 computers

(U)

The analysis of a fly-by-wire longitudinal control system, specifically that of the space shuttle orbiter, was undertaken in order to demonstrate the construction of a mathematical model depicting the relationships between forcing function and response. Each facet of modern control theory, including stability, was developed. Several computer programs were written for the HP9830 computer/plotter; these programs are basic to the study of control theory, demonstrate the importance of the transfer function, the characteristic equation, and the various forms of feedback, and will plot time and frequency (Bode) response graphs given the proper inputs. The Continuous System Modeling Program, version III, and the IBM360 were used to analyze the complex control system installed in the orbiter. The demonstration of the model and its interface with the CSMP program was given, and the efficiency of this procedure was made clear. (Author)

(U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A039 257 22/3 12/1

AEROSPACE CORP EL SEGUNDO CALIF ENGINEERING SCIENCE OPERATIONS

Optimal Three Burn Orbit Transfer. (U)

DESCRIPTIVE NOTE: Technical rept.;

MAR 77 21P Betts, J. T. ;

REPT. NO. TR-0077(2901-03)-1

CONTRACT: F04701-76-C-0077

MONITOR: SAMSO TR-77-79

UNCLASSIFIED REPORT

DESCRIPTORS: \*Orbits, \*Transfer, \*Space shuttles, \*Algorithms, Inclined orbit trajectories, Parking orbit trajectories, Nonlinear programming, Simulation, Mathematical models

IDENTIFIERS: Orbit mechanics (U)

This report presents an optimal three burn solution to a class of orbit transfer problems requiring large changes in orbital inclination. A nonlinear programming algorithm was used in conjunction with a simplified trajectory simulation, which used Keplerian orbit transfers and impulsive velocity increments. A number of parametric results were obtained using the simplified simulation. The validity of the simplified simulation was established for specific vehicle configurations with finite burns and oblate earth effects included. The effect of multiple stage rockets has also been treated.

(Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A038 895 20/4 22/3

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Roughness and Wall Temperature Effects on Boundary-Layer Transition on a 0.0175-Scale Space Shuttle Orbiter Model Tested at Mach Number 8. (U)

DESCRIPTIVE NOTE: Final rept.,

APR 77 42P Wannenwetsch, G. D. ;

Martindale, W. R. ;

REPT. NO. AECC-TR-77-19

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO, Inc., Tullahoma, Tenn., Rept. no. ARO-VKF-TR-76-146.

DESCRIPTORS: \*Boundary layer transition, \*Heat transfer, \*Space shuttles, Surface roughness, Heat shields, Aerodynamic heating, Atmosphere entry, Reentry vehicles, Hypersonic vehicles, Wind tunnel models, Hypersonic wind tunnels, Angle of attack, Stagnation temperature, Surface temperature, Walls, Liquid nitrogen, Experimental data, Cooling

IDENTIFIERS: Orbiter vehicles, Wall temperature (U)

Heat-transfer tests were conducted on the Space Shuttle Orbiter Vehicle in the AEDC/VKF Hypersonic Wind Tunnel (B) to determine the location of boundary-layer transition for a simulated reentry phase flight profile. The model was a 0.0175-scale model with simulated randomly misaligned thermal protection system tiles etched into the windward surface. The tests were conducted at a nominal free-stream Mach number of 8, free-stream unit Reynolds numbers ranging from 0.5 million to 3.7 million per ft, and angles of attack of 30, 35, and 40 deg. Values of wall temperature to free-stream stagnation temperature ranged from 0.14 to 0.44. Representative test data and an analysis of the windward surface centerline heat-transfer data are included. Effects of wall temperature, tile roughness, and angle of attack on the location of transition are discussed. (U)

AD-A039 257

UNCLASSIFIED

PAGE

21

AD-A038 895

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A038 673 22/2 5/1

DEFENSE SYSTEMS MANAGEMENT COLL FORT BELVOIR VA

Operations Management of DOD Space Missions  
in the Shuttle Era.

(U)

DESCRIPTIVE NOTE: Study project rept.,  
NOV 76 107P Tringali, Charles J. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Space missions, \*Management planning  
and control, \*Space shuttles, Logistics support,  
Communication satellites, Space transportation,  
Department of Defense, Military requirements,  
Launching

(U)

This report presents a history of the development  
of the Space Transportation System (STS) to  
date between the National Aeronautics and Space  
Administration (NASA) and the executive agency  
acting for the Department of Defense, the  
United States Air Force. The STS consists  
of the NASA-developed space shuttle orbiter, the  
USAF-developed upper stage, the communications  
networks and launch base complexes of both agencies,  
and the satellite payloads developed by many user  
agencies to be placed in space. The program  
development is traced chronologically in terms of key  
joint-agency agreements, management interfaces, and  
compromises made as implementation of early proposals  
was accomplished. A proposal is made to develop a  
joint-agency STS operation authority responsive to  
national command/policy channels. (Author)

(U)

AD-A038 673

UNCLASSIFIED

PAGE

22

AD-A038 670

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A038 670 22/2 5/1 14/2

DEFENSE SYSTEMS MANAGEMENT COLL FORT BELVOIR VA

Major Range Acquisitions for the Space  
Shuttle/Satellite Control Satellite  
Era.

(U)

DESCRIPTIVE NOTE: Study project rept.,  
NOV 76 38P Lauck, Robert E. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Space shuttles,  
\*Ranges(Facilities), \*Planning programming  
budgeting, Test facilities, Air Force planning,  
Department of Defense, Command and control  
systems, Space missions, Military requirements

(U)

The 1980's will see a new era in military space  
activities. The Space Shuttle and Satellite  
Control Satellite are two systems which will  
expedite a transition from a research and development  
orientation to operational exploitation of this  
fourth medium. The USAF National Ranges  
(Eastern Test Range, Western Test Range  
and Satellite Control Facility) will  
experience extensive changes in their missions and  
configuration with the advent of these systems.  
This study examines the directives and regulations  
governing the planning, programming and budgeting  
system (PPBS) for these Ranges. A review of  
potential changes to the Ranges to fully exploit  
the Shuttle and SCS capabilities is then  
accomplished. Capabilities which improve the  
effectiveness of space operations are analyzed, as  
well as, cost-saving and security improvements. It  
is concluded that major changes to Range  
configurations can be expected as a result of the  
employment of the Shuttle and SCS systems. An  
assessment of the effectiveness of the PPBS  
guidance to stimulate the necessary actions to  
accomplish these changes follows, with the conclusion  
that the Test and Evaluation (T and E)  
orientation of these directives and regulations does  
not provide the best environment for proper Range  
planning as we approach this new era in space  
operations.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A037 157 22/2 21/8-2 12/1 9/2

HERCULES INC MAGNA UTAH BACCHUS WORKS

Space Shuttle Response to Acoustic  
Combustion Instability in the solid Rocket  
Boosters.

(U)

DESCRIPTIVE NOTE: Final rept. Jun 75-Jun 76.

JUN 76 84p Jensen, F. R. ;

CONTRACT: F04611-73-C-0025

PROJ: 5730

TASK: 10

MONITOR: AFRPL

TR-76-62

UNCLASSIFIED REPORT

DESCRIPTORS: \*Space shuttles. \*Structural response.  
\*Oscillation. \*Acoustics. \*Booster rocket engines.  
Combustion stability. Mathematical models.  
Computerized simulation. Structural analysis.  
Instability. Mechanical impedance.  
Loads (forces). Displacement. Attachment.  
External stores. Combustion  
IDENTIFIERS: PE62302F, WUAFRPL573010BY

(U)  
(U)

Response of the Space Shuttle vehicle to  
unstable acoustic pressure oscillations in the solid  
rocket boosters (SRB's) was calculated. The  
response was expressed in terms of forces and  
displacements at the attach points between the  
SRB's and the External Tank (ET), and between  
the ET and the Orbiter. The response  
calculations satisfied the objectives of the program.  
The NASTRAN computer program was used to analyze  
the various finite element shuttle models. Finite  
element models of the SRB, ET, and Orbiter were  
supplied by North American Rockwell. A  
detailed finite element model of the solid rocket  
motor (SRM) was constructed for use with the cyclic  
symmetry option in NASTRAN. The models were  
analyzed separately and results were combined to  
represent the total structure by using a mechanical  
impedance-type approach. Some hand calculations  
were performed to estimate the axial connection point  
force and displacement. The good agreement between  
hand calculation and computer solution provided some  
confidence in the computer solution. A maximum  
attach point load of 1600 lbs was calculated for a +  
or - 1.0 psi pressure oscillation level.

(U)

AD-A037 157

UNCLASSIFIED

PAGE

23

AD-A034 947

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A034 947 22/2 22/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
ENGINEERINGMaximum Payload Orbital Transfers for a  
Space Shuttle Solid-Fuel Upper Stage  
Vehicle.

(U)

DESCRIPTIVE NOTE: Waters's thesis,

DEC 76 112p Wocko, John W. ;

REPT. NO. AFIT/GA/MC/76D-11

UNCLASSIFIED REPORT

DESCRIPTORS: \*Space shuttles. \*Payload analyses.  
\*orbits. Transfer. Solid rocket fuels. Space  
transportation. Earth orbits. Artificial satellites.  
Spacecraft defense systems. Reusable equipment.  
Solid propellant rocket engines. Booster rocket  
engines. Mission profiles. Boundary value problems.  
Plane geometry. Mathematical analysis. Computer  
programs  
IDENTIFIERS: Burner 2, Burner 2 upper Stages.  
USV (Upper stage Vehicle), Orbttran

(U)

(U)

A two-stage, solid-fuel proposal for the Interim  
Upper Stage Vehicle of the Space  
Transportation System has been selected for use  
by the Department of Defense. It is the purpose  
of this study to investigate the capabilities of such  
a vehicle in terms of the maximum payload which can  
be delivered to orbit. This optimal payload problem  
is examined in light of three energy management  
techniques. The first technique, thrust  
termination, involves shutting off engine thrust  
prior to complete use of propellant. The second  
technique investigates the effects on payload of  
varying the central angle through which the transfer  
is made. The third technique, offloading, examines  
the possibility of reducing the amount of available  
fuel for either stage prior to the mission to  
determine if payloads can be increased. Finite burn  
periods are assumed in this study. A multipoint  
boundary value problem results from the appearance of  
interior constraints in the problem. A numerical  
technique is used to generate solutions for a range  
of transfers in the special coplanar problem.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A034 758 22/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

Maximum Payload, Four-Impulse, Non-Coplanar, Orbital Transfers for an Upper Stage Vehicle of the Space Transportation System.

(U)

DESCRIPTIVE NOTE: Master's thesis,  
DEC 76 83P Connell, Rodney Alan ;  
REPT. NO. AFIT/GA/MC/76D-6

UNCLASSIFIED REPORT

DESCRIPTORS: \*Space Transportation, Payload, Space shuttles, Orbits, Equations of motion, Thrust, Fortran, Theses  
IDENTIFIERS: \*Orbital mechanics

(U)

Payload capabilities were calculated for an expendable upper stage vehicle compatible with the Space Shuttle Vehicle. Analysis was performed for a four-stage vehicle that was modeled with impulsive thrust and transfer trajectories which obey restricted two-body equations of motion. The magnitude of the maximum payload deployed into one of two specified orbits when the other payload is known is solved by breaking the four-impulse transfer into two dual-impulse transfer trajectories. The maximum payload for one transfer depends upon the specified payload of the other transfer. Each of the dual-impulse transfer trajectories is determined by solving a quartic equation in the square root of the semi-latus rectum of the transfer orbit. Maximum payload capability was dependent upon the available impulse, the angle between orbit planes, the difference in the radii of the terminal orbits, the plane changes at departure and arrival points, and the transfer angle. Transfer solutions were programmed on a CDC 6600 digital computer. Computed results indicate that the model vehicle is capable of many non-coplanar orbit-to-orbit transfers that still yield practical payloads. As the transfer angle deviates from the neighborhood around 180 deg and the other geometrical parameters increase, the payload decreases. (Author)

(U)

AD-A034 758

UNCLASSIFIED.

PAGE

24

AD-A034 733

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A034 733 22/2 22/3

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Simulated Thermal Protection Tile Roughness Effects on Windward Surface Heat Transfer on the Rockwell International Space Shuttle Orbiter.

(U)

DESCRIPTIVE NOTE: Final rept. 14 Nov-10 Dec 75,  
JAN 77 61P Hube, F. K. ;  
REPT. NO. AECC-TR-76-98  
PROJ: ARO-V41B-E9A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO, Inc., Tullahoma, Tenn. Rept. no. ARO-VKF-TR-76-26.

DESCRIPTORS: \*Space shuttles, \*Aerodynamic heating, Heat transfer, Reentry vehicles, Thermal insulation, Surface roughness, Angle of attack, Manned spacecraft

(U)

Heat transfer tests on the forward half of the 0.04-scale models of the Rockwell International Space Shuttle Orbiter Configuration 140C were conducted at Mach number 8. Infrared scanning was used to determine the influence of simulated thermal protection tile roughness on windward surface heat transfer level and distribution. Tile roughness was in the form of tile surface mismatch and gaps between tiles. Tile height (measured from the smooth body wall) ranged from -0.020 in. (cavity) to 0.025 in. (protuberance), and gap width ranged from 0 to 0.020 in. Data were obtained at angles of attack of 30 to 40 deg at zero side-slip at free-stream Reynolds numbers from 2,200,000 to 15,100,000 based on the total Orbiter scaled length. The infrared system is described, and data are presented which illustrate the influence of the major test parameters.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A033 871 22/2 14/1

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

Space Shuttle: A Case Study in  
Economic Analysis.

(U)

DESCRIPTIVE NOTE: Study project rept.,  
APR 76 42P Theurer, Byron ;  
PROJ: DSMS-PMC-76-1

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on Program Management  
Course.DESCRIPTORS: \*Space shuttles, \*Economic analysis,  
Manned spacecraft, Life cycle costs, Cost  
benefits, Space transportation, Cost effectiveness

(U)

This case study reports on an application of economic analysis; provides examples of the methods; draws conclusions and comments on lessons learned. It was developed from NASA and contractor primary references and from the author's experiences. In 1971, NASA was faced with a dilemma. The Space Shuttle Program, which had been established to substantially reduce the cost of space operations, was being designed to reduce principally transportation cost. Issues were surfacing which established that this transportation cost emphasis did not account for Shuttle development cost and the great bulk of the costs of a satellite program. OMB, furthermore, was imposing a peak funding ceiling which precluded developing the then - baselined configuration. Economic analysis performed by MATHEMATICA, Inc., succeeded in establishing the economic worth of Shuttle and pinpointing the most economical configuration. Of particular interest are the explicit treatment of uncertainty in the data base and the innovative methods used to graphically portray results.

(U)

AD-A033 871

UNCLASSIFIED

PAGE

25

AD-A033 793

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A033 793 9/3 17/2

AERONAUTICAL SYSTEMS DIV WRIGHT-PATTERSON AFB OHIO

Proceedings of the Multiplex Data Bus  
Conference Held at Biltmore Towers Hotel,  
Dayton, Ohio on 3-5 November 1976.

(U)

DESCRIPTIVE NOTE: Final rept.,  
NOV 76 495P Gangl, Erwin C. ;  
REPT. NO. ASD-TR-76-22

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Multiplexing, \*Bus conductors,  
Conferences, Avionics, Space shuttles, Digital  
systems, Fiber optics, Networks, Spacecraft,  
Military aircraft, Flight control systems,  
Switching, Remotely piloted vehicles, Time  
division multiplexing  
IDENTIFIERS: \*Data buses

(U)  
(U)

This is a collection of the unclassified papers presented at the AFSC Multiplex Data Bus Conference at the Biltmore Towers Hotel, Dayton, Ohio. The purpose of the conference is to collect data on lessons learned (F-15, B-1, Space Shuttle, etc.) and other newer MUX applications for a MIL-STD-1553A design handbook. Fibre Optics technology data buses, as well as commercial airline requirements in busing, is covered. A detailed abstract cannot be prepared because of the nature of the material. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 389 20/4 22/2

YALE UNIV NEW HAVEN CONN DEPT OF ENGINEERING AND APPLIED SCIENCE

Nonequilibrium Stagnation Region Aerodynamic Heating of Hypersonic Glide Vehicles, (U)

Ramiro: 75 22P Rosner, Daniel E.; Cibrian,

CONTRACT: AF-AFOSR-2487-73, NAS9-13058

PROJ: AF-9750

TASK: 975002

MONITOR: AFOSR TR-76-0965

## UNCLASSIFIED REPORT

Availability: Pub. in Jnl. Progress in Astronautics and Aeronautics, v39 p415-435 1975.

SUPPLEMENTARY NOTE: Presented at the AIAA/ASME Thermophysics and Heat Transfer Conference, 15-17 Jul 74, Boston, Mass., Paper no. 74-755.

DESCRIPTORS: \*Aerodynamic heating, \*Space shuttles, Surface temperature, Stagnation temperature, Recombination reactions, Dissociation, Laminar boundary layer, Ablation, Oxygen, Nitrogen, Atmosphere entry, Reprints (U)

IDENTIFIERS: Hypersonic glide vehicles (U)

A simple method of predicting aerodynamic heating and corresponding radiation equilibrium surface temperature-time histories for critical locations on Space Shuttle Orbiter-type vehicles is presented. The method is based on a generalization of equations developed earlier by Roshar for predicting energy transfer and radiation equilibrium temperatures of surfaces with arbitrary catalytic activity and total emittance. Recent experimental data for O and N atom recombination probabilities on candidate material surfaces above 1000 K are used to assess chemical nonequilibrium effects for a range of nose radii and a specific Space Shuttle re-entry trajectory. Low catalytic activity will be especially important in locations of large effective nose radius by both increasing oxidation-resistant coating lifetime and reducing energy transfer into the vehicle. (U)

AD-A030 389

## UNCLASSIFIED

PAGE

26

AD-A030 329

## UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A030 329 8/8 14/5 22/2

COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H

Skylab Imagery: Application Reservoir Management in New England. (U)

DESCRIPTIVE NOTE: Final rept. Apr 73-Sep 75, SEP 76 58P McKim, H. L.; Gatto, L. W.; Merry, C. J.; Haugen, R. K.;

REPT. NO. CREL-SR-76-7

CONTRACT: NASA-T-4646-B

PROJ: NASA-EP-N089

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Resource management, \*Land use, \*Aerial photographs, \*Space stations, Flooding, Aerial reconnaissance, Manned spacecraft, Photographic images, Land areas, Image processing, Urban planning, Multiband spectral reconnaissance, Mapping, Infrared photography (U)

IDENTIFIERS: \*Skylab, Reservoir management, LANDSAT multispectral imagery, EREP(Earth Resources Experimental Package), Earth Resources Experimental Package (U)

The purpose of this investigation was to determine the utility of Skylab S190A and B photography for providing reservoir management information in New England. LANDSAT, Skylab S190A and S190B and RB75/RC8 images were reduced to a common scale of 1:63,360 for a mapping base to demonstrate the extent to which the imagery could be utilized in the preparation of reconnaissance land use maps. These types of maps are required in the baseline evaluation of areas for reservoir management planning and for future environmental planning activities, i.e. permit evaluation and impact statements. Visual interpretations were accomplished on original NASA color infrared S190A/B and RB75/RC8 transparencies and a LANDSAT false color print made in-house. Ancillary data were not used during the mapping exercise to eliminate bias in the comparisons and to ensure the results were derived strictly from interpretations of tones and textures on the photography. Significant findings of this investigation were as follows: (1) S190B imagery is superior to the LANDSAT MSS imagery for land use mapping, (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A029 569 21/8.2 13/2 22/2

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Studies of the Exhaust Products from Solid Propellant Rocket Motors.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Jul 73-30 Jun 75,  
 SEP 76 118P Dawbarn, R. ; Kinslow, M. ;  
 REPT. NO. AEDC-TR-76-49  
 PROJ: AF-921E, ARO-V34P-05A

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO, Inc., Tullahoma, Tenn., Rept. no. ARO-VKF-TR-75-112.

DESCRIPTORS: \*Exhaust gases, \*Combustion products, \*Solid propellant rocket engines, Hydrogen chloride, Alumina, Water vapor, Environmental tests, Particles, Condensation nuclei, Space shuttles, Contamination, Hydrochloric acid, Test facilities, Instrumentation

(U)

This study was undertaken to determine the feasibility of conducting environmental chamber tests on the physical processes which occur when a solid rocket motor exhaust mixes with the ambient atmosphere. Of particular interest was the interaction between hydrogen chloride, aluminum oxide, and water vapor. The program consisted of three phases: (1) building a small rocket motor and using it to provide the exhaust species in a controlled environment; (2) evaluating instruments used to detect and measure HCl concentrations and if possible determining whether the HCl existed in the gaseous state or as an acid aerosol; (3) monitoring a series of 6.4-percent scale space shuttle motor tests and comparing the results to the environmental chamber studies. Eighteen firings were conducted in an environmental chamber with the initial ambient relative humidity set at values from 29 to 100 percent. Two additional firings were made in a large shed, and four were made on an open concrete apron. Six test firings at MSFC were monitored, and the ground level concentrations are reported.

(U)

AD-A029 569

UNCLASSIFIED

PAGE

27

AD-A028 742

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A028 742 21/8.2 22/2

NAVAL UNDERSEA CENTER SAN DIEGO CALIF

Solid Rocket Booster Dewatering System.

(U)

DESCRIPTIVE NOTE: Research and development rept. Aug 75-Apr 76,  
 JUN 76 35P Schlosser, A. J. ;  
 REPT. NO. NUC-TP-514  
 MONITOR: GIDEP, GIDEP E060-0566, 347.00.00.00-Y3-10

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Solid propellant rocket engines, \*Booster rocket engines, \*Recovery vehicles, Space shuttles, Recovery, Jettisonable equipment  
 IDENTIFIERS: \*Dewatering systems

(U)  
(U)

A dewatering system is required for the recovery of jettisoned solid rocket boosters (SRBs) used in the National Aeronautics and Space Administration (NASA) space shuttle program. The dewatering system will consist of an unmanned vehicle (nozzle plug); a control console; and handling, employment, storage, and support systems. After the nozzle plug (NP) has transitioned to the SRB, it will be flown into the SRB nozzle for initial spar mode dewatering. Locking arms are deployed to hold the NP, and compressed air from the recovery vessel is forced into the SRB for rapid, initial dewatering. When the SRB assumes the log mode, a sewer plug is inflated, sealing the nozzle, and final dewatering occurs. The SRB is then ready for towing. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A027 552

5/1

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

DOD Participation in the Shuttle Program a  
Management Analysis.

(U)

DESCRIPTIVE NOTE: Student project rept.,  
MAY 75 55P Baker, James P. ;

PROJ: DSMS-PWC-75-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Research management, \*Space shuttles,  
\*Management planning and control, Cooperation,  
Department of Defense, Allocations, Systems  
engineering, Space stations, Air Force research,  
Air Force budgets, Resource management, History,  
Logistics support, Payload, Integrated systems,  
Missions, Costs

(U)

IDENTIFIERS: Joint NASA DOD activities,

National Aeronautics and space administration

(U)

This study assesses the potential impact of DOD  
participation in the Space Shuttle Program upon  
future military space operations. Five key issues  
affecting DOD future Shuttle operations are:

(1) Inadequate management interface between  
DOD/NASA; (2) DOD/USAF political

considerations in the Shuttle support; (3)  
Inadequate USAF funding during early states of  
the program; (4) Inadequate integrated  
logistics support; and (5) Mission applications  
and payload integration problems. Each of these  
areas is discussed in detail in the report. The  
author concludes that lack of DOD commitment to  
the Shuttle Program, in which DOD is a major  
user, may cause DOD to be severely limited in its  
potential application of the system in the next  
decade.

(U)

AD-A027 552

UNCLASSIFIED

PAGE

28

AD-A026 384

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A026 384

5/1

22/2

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA

Management of DOD Space Payload Integration  
in the Space Shuttle Era.

(U)

DESCRIPTIVE NOTE: Student project rept.,  
MAY 76 59P Steinkamp, Henry W. , Jr;  
PROJ: DSMS-PWC-76-1

## UNCLASSIFIED REPORT

DESCRIPTORS: \*Management planning and control,  
\*Space shuttles, \*Payload analyses, \*Spacecraft,  
\*Launch vehicles, Integrated systems, Space  
Systems, Economic analysis, Efficiency,  
Effectiveness, Payload, Base lines

(U)

This report reviews the current management of DOD  
launch vehicle/spacecraft integration and then shows  
how the characteristics of the Space Shuttle will  
require changes to this baseline. The study has  
been based on a review of NASA and DOD  
literature, interviews with knowledgeable USAF  
officials and the author's experience in expendable  
launch vehicle planning and in Shuttle payload  
integration development. The results of the  
investigation provided supporting rationale for  
establishing a centralized DOD payload/Space  
Shuttle integration management structure. An  
important question was whether centralized management  
would motivate more economical utilization of the  
Shuttle. In comparison to management  
decentralized to satellite System Program  
Offices of Industrial Fund Techniques, it was  
concluded that centralization would be more effective  
and efficient. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A026 267 22/1 22/2

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO

Astronaut Manual EVA Guidance: An Operational Procedure.

(U)

DESCRIPTIVE NOTE: Master's thesis,  
DEC 75 81P Higgins, David Barnett ;  
REPT. NO. AFIT-CI-76-33

UNCLASSIFIED REPORT

DESCRIPTORS: \*Space shuttles, \*Extravehicular activity, Astronauts, Equations of motion, Computerized simulation, Rendezvous trajectories, Space navigation, Theses  
IDENTIFIERS: \*Two body problem

(U)  
(U)

The exact, unperturbed, two-body equations of motion of an astronaut about the center of the earth are derived for an orbiting coordinate system. These equations are used as the equations of the astronaut's motion relative to the space shuttle, which is located at the coordinate origin. A non-pictorial display scheme is developed for use with an interactive computer simulation which uses the above mentioned equations of relative motion. A method of plotting a field of nominal intercept paths is presented along with a procedure for using such a plot as a guidance aid. Simulations using this procedure are described. An appendix contains the description of a light weight, non-mechanical range estimation aid.

(U)

AD-A026 267

UNCLASSIFIED

PAGE

29

AD-A025 080

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A025 080 22/2

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Heat-Transfer Tests of a 0.0175-Scale Model of the Space Shuttle at Mach Numbers 2.5, 3.5, 4.5, and 5.5.

(U)

DESCRIPTIVE NOTE: Final rept. 31 Mar-21 May 75,  
JUN 76 35P Nutt, K. W. ; Martindale, W. R. ;

REPT. NO. AECC-TR-75-153  
PROJ: AF-9772, ARD-V41A-A4A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARD, Inc., Tullahoma, Tenn., Rept. no. ARD-VKF-TR-75-141.

DESCRIPTORS: \*Space shuttles, \*Heat transfer, Test methods, Scale models, Model tests, Ascent trajectories, Wind tunnel tests, Mach number, Reynolds number, Booster rocket engines, Solid propellant rocket engines, External stores, Propellant tanks

(U)

Heat-transfer tests were conducted on the Space Shuttle Integrated Vehicle to investigate heat-transfer rates during the ascent phase of the flight profile. The model was a 0.0175-scale, thin skin, thermocouple-equipped model (60-OIS) of the Rockwell International Vehicle 5 configuration. The tests were conducted at nominal Mach numbers of 2.5, 3.5, 4.5, and 5.5 and a free-stream unit Reynolds of 5 million per foot. Two nose configurations were tested on the external tank. Data were obtained with the external tank alone and with the external tank and solid rocket booster in the integrated vehicle configuration. This report presents representative test results and data comparisons with theoretical calculations.

(U)

(Author)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A024 553 22/2 20/4

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENNHeat-Transfer Tests on the Rockwell  
International Space Shuttle Orbiter with  
Boundary-Layer Trips (OH-54).

(U)

DESCRIPTIVE NOTE: Final rept. October 74-Sep 75.

MAY 76 44P

Carver, D. B. ;

REPT. NO. AEDC-TR-76-28

PROJ: AF-921E, ARO-V41B-82A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO,  
Inc., Tullahoma, Tenn, Rept. no. ARO-VKF-TR-  
75-165.DESCRIPTORS: \*Space shuttles, Aerothermodynamics,  
Aerodynamic heating, Heat transfer, Reentry  
vehicles, Boundary layer transition, Hypersonic  
flow, Hypersonic characteristics, Wind tunnel  
models, Model tests, Paints, Flow visualization,  
Atmosphere entry, Surface roughness, Spacecraft  
components, Configurations, Reynolds number, Flow  
fields

(U)

IDENTIFIERS: Trip devices (Wind tunnel models),  
Phase change paint

(U)

Aerothermodynamic transition tests on a model of  
the forward half of the Rockwell International  
Space Shuttle Orbiter Configuration 140C  
were conducted at Mach Number 8. Phase-change  
paint was used to determine the aerodynamic heating  
rates on the windward side of Orbiter models during  
simulated atmospheric reentry. The majority of the  
data was obtained using spherical trip elements of  
varying sizes at three different axial stations along  
the model to determine the effect of roughness size  
and location on boundary-layer transition.  
Additional data were taken with models which had  
scale indentations that simulated external tank  
attachment rings, nose wheel well doors, and a  
surface insulation interface gap. Data were taken  
over an angle-of-attack range from 20 to 40 deg at  
free-stream Reynolds numbers, based on the total  
Orbiter scaled length, from 3.2 to 16.1 million.

(U)

AD-A024 553

UNCLASSIFIED

PAGE

30

AD-A022 864

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A022 864 22/1

TRW DEFENSE AND SPACE SYSTEMS GROUP REDONDO BEACH  
CALIFDepartment of Defense Space Transportation  
System Mission Operations System Definition  
- Computational Function Allocation.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Mar 75-30 Mar 76.

MAR 76 202P

Baker, K. L. ;

REPT. NO. TRW-26937-6032-TU-00

CONTRACT: F04701-75-C-0025

MONITOR: SAMS0 TR-76-39

UNCLASSIFIED REPORT

DESCRIPTORS: \*Space missions, \*Management planning  
and control, Computations, Computers, Space  
shuttles, Control systems, Allocations, Department  
of Defense

(U)

The document presents a baseline set of  
computational functions required by the DCD  
Mission Operations System and its interfacing  
systems. These requirements are concerned with the  
operational use of the Space Shuttle for  
achieving the DOD mission objectives without  
determining whether the facilities were under NASA  
or DOD control. The document addresses the  
computational function description and allocation,  
comparison with the NASA computational functions  
and allocation, external system interfaces, and the  
security requirements of each facility.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 417 22/2 21/8-1 22/1

MCDONNELL DOUGLAS ASTRONAUTICS CO HUNTINGTON BEACH  
CALIFDelta Interim Upper Stage System Study.  
Volume II. Technical Report.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Oct 74-30 Jun 75,  
JUN 75 534P Dawson, R. P.; Meyers, J.  
F.; Doiron, R. C.; Monger, R. G.;  
REPT. NO. MDC-G5973-Vol-2  
CONTRACT: F04701-75-C-0032  
MONITOR: SAMSO TR-75-178-Vol-2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-A021  
416.

DESCRIPTORS: \*Space shuttles, \*Space tugs, \*Launch  
vehicles, Space transportation, Liquid propellant  
rocket engines, Controllable thrust rocket engines,  
Configuration management, Logistics management,  
Management planning and control

(U)

IDENTIFIERS: Delta launch vehicles, \*Restartable  
rocket engines, \*Orbit to orbit shuttles, Space  
transportation system

(U)

The Space Shuttle System will require an  
upper stage (Space Tug, or QOS - Orbit-to-  
Orbit Shuttle) to achieve maximum  
effectiveness. A reusable upper stage, although  
highly desirable, requires a greater initial cash  
outlay, which would compete for early Shuttle  
development program funds. Hence, an expendable  
upper stage, to be used in the interim, has been the  
subject of various government studies in recent  
years. This report describes the results of one of  
these studies, that which addressed the use of  
Delta launch vehicle hardware to satisfy this  
requirement. Basic Delta hardware is described,  
along with the changes which would be required to  
make it compatible with Shuttle. Both  
performance and costs are presented, and conclusions  
drawn.

(U)

AD-A021 417

UNCLASSIFIED

PAGE

31

AD-A021 416

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 416 22/2 21/8-1 22/1

MCDONNELL DOUGLAS ASTRONAUTICS CO HUNTINGTON BEACH  
CALIFDelta Interim Upper Stage System Study.  
Volume I. Executive Summary.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Oct 74-30 Jun 75,  
JUN 75 56P Dawson, R. P.; Meyers, J.  
F.; Doiron, R. C.; Monger, R. G.;  
REPT. NO. MDC-G5973-Vol-1  
CONTRACT: F04701-75-C-0032  
MONITOR: SAMSO TR-75-178-Vol-1

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-A021  
417.

DESCRIPTORS: \*Space shuttles, \*Space tugs, \*Launch  
vehicles, Space transportation, Liquid propellant  
rocket engines, Controllable thrust rocket engines,  
Configuration management, Logistics management,  
Management planning and control

(U)

IDENTIFIERS: Delta launch vehicles, \*Restartable  
rocket engines, \*Orbit to orbit shuttles, Space  
transportation system

(U)

This study provides DOD with the preliminary  
design of a Delta IUS system, the identification  
of IUS/Orbiter and IUS/Spacecraft interfaces,  
and Delta IUS program definition and costs.  
The study has shown that with the addition of two  
inexpensive propellant tanks and other minor stage  
changes, the basic Delta stage can be easily  
converted into an IUS stage that can capture all of  
the DOD and NASA earth orbital missions with  
ample performance margin (4,820 lb to synchronous  
orbit). Furthermore, the addition of simple,  
low-cost auxiliary stages based on existing solid  
propellant motors, the Delta IUS can capture all  
of the NASA planetary missions specified. The  
combinations of IUS elements proposed - the Tri-  
Tank Family approach - provides the flexibility  
to select the least expensive IUS suitable for the  
mission, thus enhancing cost effectiveness.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 415 22/2

## GENERAL DYNAMICS/CONVAIR SAN DIEGO CALIF

Centaur Interim Upper Stage (IUS) System  
Study. Volume II. Technical.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Oct 74-1 Jul 75.

JUL 75 455P Heald, D. A. ; Nelson, A.

W. ; Harris, R. D. ; Peters, C. F. ;

REPT. NO. CASD-AFS-75-006-Vol-2

CONTRACT: F04701-75-C-0035

MONITOR: SAMSO TR-75-181-Vol-2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-A021 401.

DESCRIPTORS: \*Space transportation, \*Space shuttles,  
\*Space tugs, \*Management planning and control,  
Configuration management, Liquid propellant rocket  
engines, Mission profiles, Ground support equipment,  
Logistics management, Launch vehicles, Life cycle  
costs

(U)

IDENTIFIERS: \*Centaur, \*Reusable spacecraft,

(U)

\*Expendable spacecraft

The IUS programs defined in the study incorporate a primary propulsive stage based on the existing D-1 Centaur vehicle used by NASA for Viking and by DOD for FleetSatComm. The study concludes that lowest development costs are incurred with an expendable Centaur IUS which is 89 percent existing hardware. The principal development tasks for this program would be modifications for compatibility with the Orbiter and SGLS/STDN communications. Lowest life cycle costs can be achieved with a reusable Centaur IUS where added development is required for a wide hydrogen tank and a fuel cell power supply. Trade studies and options including shorter length vehicles and compatibility with NASA planned tracking and Data Relay Satellite (TDRSS) system are also defined. The inherent high performance of cryogenic propellants assures comfortable accommodation of current and future IUS program requirements.

(U)

AD-A021 415

UNCLASSIFIED

PAGE

32

AD-A021 401

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A021 401 22/2

## GENERAL DYNAMICS/CONVAIR SAN DIEGO CALIF

Centaur Interim Upper Stage (IUS) System  
Study. Volume I. Executive Summary.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Oct 74-1 Jul 75.

JUL 75 60P Heald, D. A. ; Nelson, A.

W. ; Harris, R. D. ; Peters, C. F. ;

REPT. NO. CASD-AFS-75-006-Vol-1

CONTRACT: F04701-75-C-0035

MONITOR: SAMSO TR-75-181-Vol-1

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-A021 415.

DESCRIPTORS: \*Space transportation, \*Space shuttles,  
\*Space tugs, \*Management planning and control,  
Configuration management, Liquid propellant rocket  
engines, Mission profiles, Ground support equipment,  
Logistics management, Launch vehicles

(U)

IDENTIFIERS: \*Centaur, \*Reusable spacecraft,

(U)

\*Expendable spacecraft

The overall objective of this system study was to provide preliminary design(s), airborne and ground interface definition, substantiated life-cycle cost estimates and total program definitions for a Centaur Interim Upper Stage (IUS) System.

The IUS system consists of a primary propulsive stage (a Centaur version), auxiliary propulsive stage(s) (when required), airborne support equipment, aerospace ground equipment, software, and unique facilities. Six alternative Centaur IUS programs were defined; each satisfying DOD and/or NASA requirements as specified in SAMSO document SR-IUS-100, 'Interim Upper Stage (IUS) System Requirements', Change 3, dated 4 April 1975. The IUS programs defined in the study incorporate a primary propulsive stage based on the existing D-1 Centaur vehicle used by NASA for Viking and by DOD for FleetSatComm.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A020 049 6/5 6/19

SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

Interruption of Denitrogenation by Air-  
Breathing.

DESCRIPTIVE NOTE: Final rept. Oct 74-Jul 75,

DEC 75 11P Cooke, Julian P. ;

REPT. NO. SAM-TR-75-45

PROJ: AF-7164

TASK: 716411

UNCLASSIFIED REPORT

DESCRIPTORS: \*Decompression sickness, \*Respiration,  
\*Air, \*Nitrogen, \*Oxygen, Altitude sickness,  
Space shuttles, Space crews, Pressure suits, Low  
pressure, Mixtures, Interruption, Extravascular  
activity, Breathing masks, Chemical composition,  
Aerospace medicine

IDENTIFIERS: \*Denitrogenation

This study was designed to determine whether or not  
a proposed denitrogenation time, interrupted with a  
short air-breathing time and when matched with an  
additional denitrogenation time equal to the  
interruption, would protect from bends  
(decompression sickness) during the Shuttle  
program. The gas mixtures represent those  
obtainable with the personal breathing system.  
Using 17 human volunteers, the study showed that a  
3-hr denitrogenation time with a 95% O<sub>2</sub>- 5%  
N<sub>2</sub> breathing mixture at 14.5 psia (745 torr)  
would protect most humans from bends during a 2-hr  
exposure at a suit pressure of 3.8 psia (197  
torr) while breathing 92% O<sub>2</sub>- 8% N<sub>2</sub>. A 5-  
or 10-min interruptive period with air-breathing  
after 1, 2, or 3 hr of denitrogenation at 14.5 psia,  
however, even when followed by an additional  
denitrogenation period equal to the interruptive  
period, will result in an occasional case of bends in  
some subjects during the 2-hr exposure at 3.8 psia.  
The first symptoms of bends can be expected after  
about 40 min. Testing is suggested with a 95%  
O<sub>2</sub>- 5% N<sub>2</sub> gas mixture for both exposures, along  
with longer make-up times of denitrogenation.  
(Author)

(U)

AD-A020 049

UNCLASSIFIED

PAGE

33

AD-A019 328

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A019 328 22/3 22/2

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
ENGINEERINGTime-Optimal Rendezvous for an Upper Stage  
Vehicle of the Space Transportation  
System.

(U)

DESCRIPTIVE NOTE: Master's thesis,

DEC 75 145P Johnson, Raymond P. ;

REPT. NO. CA/MC/75C-4

UNCLASSIFIED REPORT

DESCRIPTORS: \*Space shuttles, \*Rendezvous  
trajectories, Reusable equipment, Space tugs,  
Space transportation, Transfer trajectories,  
Boundary value problems, FORTRAN, Computer  
programs, Theses, Nonlinear differential equations,  
Calculus of variations, Numerical integration  
IDENTIFIERS: \*Reusable rocket engines, \*Upper  
stage vehicles, FORTRAN 4 programming language,  
Two point boundary value problems

(U)

(U)

This study investigates minimum-time rendezvous  
trajectories and thrust control profiles for an upper  
stage vehicle of the Space Transportation  
System. A numerical technique is presented to  
solve the nonlinear two-point boundary value problem  
associated with the finite-thrust time-optimal  
trajectories. This method serves to reduce the  
associated computer burden through the use of a  
general-purpose subroutine developed by the  
mathematician M.J.D. Powell to solve a system  
of nonlinear equations. The general technique uses a  
gradient-type iteration when poorer estimates of the  
unknowns are encountered and, yet, switches  
automatically to the more rapid convergence of a  
Newton-Raphson scheme as the estimates are  
improved. The discontinuities associated with the  
on-off thrust control are overcome through an  
iterative determination of the related switching  
times.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A019 274 22/2 22/3

TRW SYSTEMS GROUP REDONDO BEACH CALIF

OOD/STS Mission Operations Systems  
Definition Mission Assessment Report:  
Operations Design Mission B.

DESCRIPTIVE NOTE: Final rept. 1 Mar-16 Dec 75.

DEC 75 262P

REPT. NO. TRW-26937-6050-RU-00

CONTRACT: F04701-75-C-0025

MONITOR: SAMSO TR-75-262

UNCLASSIFIED REPORT

DESCRIPTORS: \*Space shuttles, \*Space missions,  
\*Space transportation, Payload, Space crews,  
Ground support equipment, Trade off analyses,  
Deployment, Space navigation, Solid rocket  
propellants, Covariance, Assessment

This report presents the results of analysis of a  
near term DOD payload deployment mission utilizing  
the Space Shuttle vehicle in conjunction with an  
Interim Upper Stage (IUS). This baseline  
issue of the report concentrates on development of a  
nominal mission plan for a particular launch date and  
time. Such items as attitude timelines, approximate  
RCS/DMS propellant utilization histories, ground  
tracks, ground station coverage timelines and  
navigation accuracy at IUS deployment opportunities  
are included. Principal emphasis is placed on  
development of an IUS deployment timeline for near  
term missions. (Author)

(U)

AD-A019 274

UNCLASSIFIED

PAGE

34

AD-A018 755

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A018 755 22/2 22/3

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENN

Real Gas Scale Effects on Hypersonic  
Laminar Boundary-Layer Parameters Including  
Effects of Entropy-Layer Swallowing.

(U)

DESCRIPTIVE NOTE: Final rept. 21 Mar-20 Oct 74.

DEC 75 52P

Martindale, W. R.; Mayne, A. W., Jr.;

Marchand, E. D.;

REPT. NO. AEC-TR-75-2

PROJ: ARO-VC523

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Sponsored in part by National  
Aeronautics and Space Administration, Houston,  
Tex. Lyndon B. Johnson Space Center. Prepared  
in cooperation with ARO, Inc., Tullahoma, Tenn.  
Rept. no. ARO-VKF-TR-74-104.

DESCRIPTORS: \*Space shuttles, \*Atmosphere entry,  
Flow fields, Laminar boundary layer, Descent  
trajectories, Boundary layer transition, Entropy,  
Aerodynamic heating

(U)

Inviscid and viscous (laminar boundary layer)  
flow-field calculations under perfect gas hypersonic  
wind tunnel and equilibrium real gas flight  
conditions are presented for the windward centerline  
of the Rockwell International 139 Space  
Shuttle Orbiter at 30 deg angle of attack.

Correlation parameters for laminar boundary-layer  
edge quantities and surface heat transfer are  
developed which properly account for entropy-layer-  
swallowing effects under both real and perfect gas  
conditions. A cursory examination of chemical  
nonequilibrium effects on the inviscid flow field  
based on collision shock relaxation is presented.  
Some implications of the proposed correlation  
parameters in boundary-layer transition are  
discussed.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A018 540 22/2 15/5

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

Salyut to be Supplied Automatically. (U)

NOV 75 8P

REPT. NO. FTD-ID(RS)J-2282-75

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited trans. of Avia, Maandblad  
Voor Lucht- en Ruimtevaart (Netherlands) v33E  
n12 p372-373 Dec 74.

DESCRIPTORS: \*Space stations, \*USSR, \*Logistics  
support, Automatic, Astronauts, Docking, Food  
dispensing, Refueling in flight, Telescopes, Sun,  
Lunar environment, Scientific research,  
Translations (U)

IDENTIFIERS: Salyut space station, Cosmonauts (U)

In the near future, space stations of the Salyut  
type will be supplied automatically by unmanned  
Soyuz space ships to be guided from the earth and  
automatically coupled to the station. By this means  
cosmonauts staying on board a Salyut would not only  
be supplied with extra victuals, but also with fuel  
for the space station so that it can function for  
longer than is now the case. (U)

AD-A018 540

UNCLASSIFIED

PAGE

35

AD-A018 534

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A018 534 22/2 5/9

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

The Value of an Orbital Minute. (U)

DEC 75 8P

REPT. NO. FTD-ID(RS)I-2398-75  
Smirnov, V. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited trans. from Pravda (USSR)  
n203(20807) p6, 22 Jul 75, by Roger T.  
Crozier.

DESCRIPTORS: \*Space stations, \*Space crews, \*USSR,  
\*Job analysis, Space flight, Space exploration,  
Scientific research, Space environments, Orbits,  
Navigation computers, Repair, Health, Skills,  
Astronauts, Time, Timeliness, Translations (U)  
IDENTIFIERS: Salyut space stations, Salyut 4 space  
station, Cosmonauts (U)

The Value of an Orbital Minute--Translation.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A018 215 22/2 22/3 5/9

TRW SYSTEMS GROUP REDONDO BEACH CALIF

Department of Defense Space Transportation  
System Mission Operations Systems  
Definition Mission Assessment Report:  
Operations Design Mission A.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Mar 17-Nov 75.

REPT. NOV 75 294P

CONTRACT: F04701-75-C-0025

MONITOR: SAMSO TR-75-261

UNCLASSIFIED REPORT

DESCRIPTORS: \*Space transportation, \*Space shuttles,  
\*Space crews, \*Space missions, Solid propellant  
rocket engines, Space flight, Synchronous  
satellites, Equatorial orbits, Payload,  
Deployment, Communication and radio systems,  
Planning, Feasibility studies, Surface to space,  
Ground support, Ground support equipment,  
Satellite attitude, Navigation computers, Doppler  
navigation, Space to surface, Landing, Reusable  
equipment, Trade off analyses, Department of  
Defense

(U)

IDENTIFIERS: \*Space transportation system,  
\*Interim upper stage vehicle, STS(Space  
transportation system), IUS(Interim upper  
stage)

(U)

This report presents the results of analysis of a  
near term DOD geosynchronous equatorial payload  
deployment mission utilizing the Space Shuttle  
vehicle in conjunction with an Interim Upper  
Stage (IUS). This baseline issue of the report  
concentrates on development of a nominal mission plan  
for a particular launch data and time. Such items  
as attitude timelines, approximate RCS/DMS  
propellant utilization histories, ground tracks,  
ground station coverage time-lines and navigation  
accuracy at IUS deployment opportunities are  
included. Principal emphasis is placed on  
development of an IUS development timeline for near  
term missions. (Author)

(U)

AD-A018 215

UNCLASSIFIED

PAGE

36

AD-A018 177

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A018 177 22/2 21/1

ROCKWELL INTERNATIONAL CORP DOWNEY CALIF SPACE DIV

Space Test Program Standard Satellite  
Launch Optimization Study.

(U)

DESCRIPTIVE NOTE: Final rept. 2 Jun-15 Sep 75.

SEP 75 122P

REPT. NO. SD-75-SA-0135

CONTRACT: F04701-75-C-0127

MONITOR: SAMSO TR-75-276

UNCLASSIFIED REPORT

DESCRIPTORS: \*Space shuttles, \*Payload,  
\*Launching, Launch vehicles, Manned spacecraft,  
External stores, Configuration management,  
Artificial satellites

(U)

The primary objective of this study was to  
determine the shape and weight of an STP Standard  
Satellite which would have a maximum probability of  
being launched 'piggy-back' on an STS mission  
between 1980-1990. The study was conducted in two  
parts. Part 1 consisted of two tasks, Mission  
Analysis and System Analysis. In these tasks,  
a shuttle mission model was selected, preliminary  
STP-STD-satellite capabilities defined and each  
shuttle mission examined to determine the excess  
volume and weight available.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A018 143 22/3 20/4 14/2

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENN

Viscous Effects on the Static Stability and  
Axial-Force Characteristics of the NASA  
Space Shuttle Orbiter at Mach Number 19. (U)

DESCRIPTIVE NOTE: Final rept.,  
DEC 75 35P  
REPT. NO. AEDC-TR-75-91  
PROJ: ARO-V41F-28A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO,  
Inc., Tullahoma, Tenn., Rept. no. ARO-VKF-TR-  
75-54.

DESCRIPTORS: \*Space shuttles, \*Orbits, \*Static  
stability, \*Hypersonic flow, Hypersonic wind  
tunnels, Mach number, Reynolds number, Angle of  
attack, Model tests, Scale models, Viscous flow,  
Atmosphere entry, Reentry vehicles (U)  
IDENTIFIERS: Axial force (U)

An experimental program was conducted in the  
AEDC-VKF hypervelocity wind tunnel (F) at a  
nominal Mach number of 19 to determine the static  
stability and axial-force characteristics of a 0.01-  
scale model of the NASA Space Shuttle  
Orbiter. The tests were conducted at an angle of  
attack of 30 deg at free-stream Reynolds numbers  
(based on model length) from 100000 to 400000.  
The results are compared to previous AEDC data at  
Mach numbers 8, 10, and 16. (Author) (U)

AD-A018 143

UNCLASSIFIED

PAGE

37

AD-A017 497

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A017 497 16/3 11/7 13/4 22/2

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENN

Aerothermal Tests of the Space Shuttle  
External Tank Insulating Material. (U)

DESCRIPTIVE NOTE: Final rept. 12 Jan-13 Feb 75,  
NOV 75 39P Matthews, R. K.; Harper, D.  
C.;  
REPT. NO. AEDC-TR-75-94  
PROJ: AF-921E, ARO-V41C-91A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO,  
Inc., Tullahoma, Tenn., Rept. no. ARO-VKF-TR-  
75-57.

DESCRIPTORS: \*Heat shields, \*Thermal insulation,  
\*Fuel tanks, \*Space shuttles, \*External stores,  
Wind tunnel tests, Aerodynamic heating, Ascent  
trajectories, Hypersonic flow, Hypersonic  
characteristics, Surface temperature, Ablation,  
Erosion (U)

Aerothermal tests were conducted to evaluate the  
performance of a candidate material for the  
insulation of the Space Shuttle external tank.  
Material samples were exposed to total temperatures  
and heating rates designed to simulate those  
experienced during the ascent phase of the Shuttle  
trajectory. These conditions were obtained in the  
VKF Hypersonic Wind Tunnel (C), where a  
large wedge was used to hold the sample and the wedge  
angle was varied to produce the desired heating rates  
and pressures on the wedge surface. Photographic  
coverage of the material performance was obtained at  
wedge angles from 0 to 38 deg. Selected test  
results are presented which show the ablation/erosion  
characteristics of the material. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A015 743 20/4 13/4 22/2

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Pressure and Heat Transfer Tests on the  
NASA Space Shuttle External Tank at Mach  
Number 16.

(U)

DESCRIPTIVE NOTE: Final rept. 9 Aug-20 Sep 74.  
OCT 75 49P Siler, L. G. ;Boudreau, A.

REPT. NO. AEDC-TR-75-31  
PROJ: AF-921E, ARO-V41F-25A  
TASK: 2

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO,  
Inc., Tullahoma, Tenn., Rept. no. ARO-VKF-TR-  
74-129.

DESCRIPTORS: \*Aerodynamic heating, \*Fuel tanks,  
\*Space shuttles, Wind tunnel tests, Hypersonic  
flow, Pressure distribution, Heat transfer,  
Simulation, Tumbling, Angle of attack, Staging,  
Separation, Roll, Free stream, Mach number,  
Interference, Reynolds number, Test methods

(U)

An experimental test program was conducted in the  
AEDC-VKF Hypervelocity Wind Tunnel (F) at  
a nominal Mach number of 16 to obtain basic heating  
and pressure distribution data on the NASA Space  
Shuttle external tank. The tests were conducted  
over an attitude range which simulated tank tumbling  
after separation from the Shuttle orbiter. The  
angles of attack varied from 0 to -180 deg with  
combinations of roll from 0 to 90 deg at free-stream  
Reynolds numbers (based on model length) from  
0.38 x 1,000,000 to 1.10 x 1,000,000. In addition  
to surface heat-transfer gages, thermographic  
phosphor paint was used to determine the interference  
heating factors on and around the various attachment  
structures and service ducts.

(U)

AD-A015 743

UNCLASSIFIED

PAGE

38

AD-A012 876

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A012 876 22/3 22/2

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Heat-Transfer Tests on the Rockwell  
International Space Shuttle Orbiter with and  
without Simulated Protuberances.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Mar-31 Jul 74.  
JUL 75 38P Carter, L. D. ;Kaul, C. E.

REPT. NO. AEDC-TR-75-20  
PROJ: AF-9705, ARO-VAS26-218A

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO,  
Inc., Tullahoma, Tenn. Rept. no. ARO-VKF-TR-  
74-126.

DESCRIPTORS: \*Space shuttles, \*Hypersonic flow,  
\*Aerodynamic heating, Aerothermodynamics,  
Atmosphere entry, Heat transfer, Angle of attack,  
Wind tunnel models  
IDENTIFIERS: \*Phase change coatings

(U)

(U)

Aerothermodynamic tests on the forward half of the  
Rockwell International Space Shuttle  
Orbiter Configuration 140C were conducted at  
Mach number 8. The phase-change paint and thin-  
skin thermocouple techniques were used to determine  
the aerodynamic heating rates on the Orbiter models  
during simulated atmospheric reentry. Smooth 0.04-  
scale models and models with scaled protuberances and  
indentations which simulated the windshields, cargo  
bay door hinges, vents, and thruster nozzles were  
tested over an angle-of-attack range from 20 to 45  
deg at yaw angles from -5 to 5 deg and at Reynolds  
numbers, based on the total Orbiter scaled length,  
from 2.15 to 15.9 million. Comparisons of the model  
heat-transfer rates obtained with a smooth surface  
and with scaled protuberances are presented.

(U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A012 875 22/3 22/2

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENN

Flow-Field Measurements in the Windward  
Surface Shock Layer of Space Shuttle  
Orbiter Configurations at Mach Number 8. (U)

DESCRIPTIVE NOTE: Final rept. 29 Sep 73-9 May 74,  
JUL 75 53P Martindale, W. R. ; Carter,

L. D. ;  
REPT. NO. AEDC-TR-75-5  
PROJ: AF-9705, ARO-VA353

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO,  
Inc., Tullahoma, Tenn. Rept. no. ARO-VKF-TR-  
74-111.

DESCRIPTORS: \*Space shuttles, \*Hypersonic  
characteristics, Flow fields, Atmosphere entry,  
Boundary layer, Angle of attack, Wind tunnel  
models (U)

Pitot pressure and total-temperature measurements  
were made in the windward surface shock layer of two  
0.0175-scale space shuttle orbiter models at  
simulated re-entry conditions. Corresponding  
surface static pressure measurements were also made.  
Flow properties at the edge of the model boundary  
layer were derived from these measurements and  
compared with values calculated using conventional  
methods. (U)

AD-A012 875

UNCLASSIFIED

PAGE

39

AD-A011 648

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A011 648 22/1 22/2

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENN

Pitch-, Yaw-, and Roll-Damping  
Characteristics of a Shuttle Orbiter at M =  
8. (U)

DESCRIPTIVE NOTE: Final rept. 24 Jun-26 Jul 74,  
MAY 75 36P Uselton, Bob L. ; Jenke,

Leroy M. ;  
REPT. NO. AEDC-TR-74-129  
PROJ: AF-9692, ARO-VA498

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO,  
Inc., Tullahoma, Tenn. Rept. no. ARO-VKF-TR-  
74-100.

DESCRIPTORS: \*Space shuttles, \*Supersonic  
characteristics, Manned spacecraft,  
Pitch(Motion), Damping, Yaw, Angle of  
attack, Wind tunnel models  
IDENTIFIERS: 089 ORBITERS, 089B orbiters (U)  
(U)

Wind tunnel tests were conducted for NASA-  
Langley at M = 8 to determine the pitch-, yaw-,  
and roll-damping characteristics of a modified 089B  
shuttle orbiter configuration. Data were obtained  
utilizing the small-amplitude forced-oscillation  
technique at angles of attack of -4.9 to 26.5 deg at  
Reynolds numbers, based on model length, of 1,180,  
000 to 4,820,000. The orbiter was dynamically  
stable in pitch, yaw, roll, and statically unstable  
in yaw for the more reference of the test  
configurations. The pitch derivatives were  
dependent on Reynolds number while the roll  
derivatives were independent of Reynolds number. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 900 190

21/2

22/2

AERJET LIQUID ROCKET CO SACRAMENTO CALIF

Orbit-to-Orbit Shuttle Engine Design  
Study. Book 1. Parametric Cycle Study.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Mar-1 Dec 71,

MAY 72 233P Luscher, Werner P. ;

CONTRACT: F04611-71-C-0040

MONITOR: AFRPL TR-72-45-Bk-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Book 2, AD-900  
192L.

DESCRIPTORS: (\*COMBUSTION CHAMBERS, SPACE PROPULSION),  
(\*RENDEZVOUS SPACECRAFT, COMBUSTION CHAMBERS), GAS  
GENERATING SYSTEMS, THROTTLING, HYDROGEN, TURBOPUMPS,  
LIQUEFIED GASES, OXYGEN, FUEL INJECTORS, REGENERATIVE  
COOLING, BLEED SYSTEMS, TURBINE BLADES, TRANSIENTS,  
EXHAUST GASES, NOZZLE AREA RATIO, STARTING, THRUST, BELL  
NOZZLES, SPACE TO SPACE, COMPUTER PROGRAMS (U)  
IDENTIFIERS: \*ORBIT TO ORBIT SHUTTLES, REUSABLE ROCKET  
MOTORS, SPACE SHUTTLES, SPACE TUGS (U)

This report presents the analytical design of  
propulsion systems utilizing LOX/Hydrogen  
propellants to be used as the propulsion for the  
Orbit to Orbit Space Vehicle of 65,000 lb  
lift-off weight. The report contains the evaluation  
of various engine cycles in the thrust range of 8,000  
lb to 50,000 lb thrust for performance, weight and  
envelope culminating in the cycle selection and  
detail design of a 25,000 lb and 10,000 lb thrust  
engine. The engine concepts are described in  
sufficient detail to obtain reliable engine weight,  
performance, envelope information and methods of  
engine control. The impact of various engine design  
requirements were evaluated. The engines are  
designed to be reusable and capable of starting in  
the idle mode operation. The technology  
requirements for meeting the engine design and  
operating requirements are identified.  
(Author)

(U)

AD- 900 190

UNCLASSIFIED

PAGE

40

AD- 894 424

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 894 424

21/8.1

22/2

ROCKETDYNE CANOGA PARK CALIF

O2/H2 Advanced Maneuvering Propulsion  
Technology Program Engine System Studies.  
Volume II. 25,000 Pound Thrust Bell  
Engine Configuration Design and Analysis.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Feb-1 Oct 71.

DEC 71 503P

REPT. NO. R-8807-2

CONTRACT: F04611-67-C-0116

MONITOR: AFRPL TR-72-4-Vol-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-890  
753L.

DESCRIPTORS: (\*CONTROLLABLE-THRUST ROCKET MOTORS,  
DESIGN), (\*LIQUID PROPELLANT ROCKET ENGINES,  
PERFORMANCE(ENGINEERING)), (\*RENDEZVOUS SPACECRAFT,  
\*SPACE PROPULSION), CONFIGURATION, COMBUSTION CHAMBERS,  
BELL NOZZLES, NOZZLE AREA RATIO, INJECTORS, COSTS (U)  
IDENTIFIERS: REUSABLE SPACECRAFT, \*RESTATABLE ROCKET  
MOTORS, \*SPACE SHUTTLES, SPACE TRANSPORTATION (U)

The report describes the results of the O2/H2  
Advanced Maneuvering Propulsion Technology  
Program Bell Engine study. The objective of  
the study was the definition of main rocket engine  
systems applicable to advanced cryogenic oxygen/  
hydrogen space vehicles. The study described in  
this volume was directed toward non-aerospike nozzle  
configurations to provide designs for comparison to  
the aerospike configuration described in Volume 1.  
Preliminary engine designs were prepared for thrust  
levels from 8,000 to 50,000 pounds for several nozzle  
and engine system configurations. A detailed design  
and analysis was carried out for a selected 25,000-  
pound-thrust engine configuration. The analysis  
included the effects of variations in certain engine  
system design conditions, development programs and  
costs, failure mode, effects, operational  
characteristics, and maintenance plans.  
(Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 893 928 22/2 13/2 6/11

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENNExperimental Investigation of Venting Water  
into a Vacuum.

(U)

DESCRIPTIVE NOTE: Final rept. 9 Aug-20 Oct 71,  
MAY 72 53P Busby, M. R. ;  
REPT. NO. AEDC-TR-72-21  
CONTRACT: F40600-72-C-0003  
PROJ: AF-921E-2, ARD-VV1137

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO,  
Inc., Tullahoma, Tenn. Rept. no. ARO-VKF-TR-  
72-2.

DESCRIPTORS: (\*SPACE STATIONS, \*WASTES(SANITARY  
ENGINEERING)), WATER, VACUUM, VENTING, SPACE  
ENVIRONMENTS, CLOSED ECOLOGICAL SYSTEMS, EXPERIMENTAL  
DATA (U)

IDENTIFIERS: ENVIRONMENTAL CONTROL SYSTEMS, MANNED  
ORBITING LABORATORIES, SKYLAB PROGRAM, WASTE  
DISPOSAL (U)

A study was undertaken to investigate the  
improvement of the venting characteristics for the  
Skylab environmental control system (ECS)  
condensate dump system. The appropriate test  
apparatus was assembled, and a systematic  
investigation was undertaken. Water venting  
experiments were conducted in the 4- by 6-ft  
Research Vacuum Chamber of the von Karman  
Gas Dynamics Facility. Nineteen nozzle  
configurations were tested, and a design which  
reduces the icing problem was found. A nozzle  
constructed from a 1/4-in.-diam tube with two 0.05-  
in.-diam orifices is compatible with the presently  
designed Skylab venting system, and icing during  
venting has been significantly reduced at pressures  
that would be encountered in spacecraft operation.  
(Author) (U)

AD- 893 928

UNCLASSIFIED

PAGE

41

AD- 890 753

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 890 753 21/8.1 22/2

ROCKETDYNE CANOGA PARK CALIF

O2/H2 Advanced Maneuvering Propulsion  
Technology Program Engine System Studies.  
Volume I. Aerospike Engine Configuration  
Design and Analysis.

(U)

DESCRIPTIVE NOTE: Final rept. 1 Jan-1 Oct 71.  
DEC 71 575P  
REPT. NO. R-8807-1  
CONTRACT: F04611-67-C-0116  
MONITOR: AFRPL TR-72-4-Vol-1

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*CONTROLLABLE-THRUST ROCKET MOTORS,  
DESIGN), (\*LIQUID PROPELLANT ROCKET ENGINES,  
PERFORMANCE(ENGINEERING)), (\*RENDEZVOUS SPACECRAFT,  
\*SPACE PROPULSION), CONFIGURATION, COMBUSTION CHAMBERS,  
TURBOPUMPS, NOZZLE THROATS, NOZZLE AREA RATIO, (U)  
REGENERATIVE COOLING, GAS GENERATING SYSTEMS, COSTS  
IDENTIFIERS: AEROSPIKE ENGINES, \*RESTARTABLE ROCKET  
MOTORS, \*SPACE SHUTTLES (U)

The engine system design and analysis studies  
provide a detailed definition of two 25,000-pound-  
thrust O2/H2 aerospike engines. The single-  
panel aerospike engine design point corresponds to  
the demonstrator thrust chamber configuration,  
specifically, chamber pressure and area ratio equal  
to 750 psia and 110:1, respectively. A second  
engine system and component design and operational  
description also is provided for the selected optimum  
aerospike engine employing a double-panel thrust  
chamber cooling circuit. The double-panel aerospike  
engine design has a chamber pressure and area ratio  
of 1000 psia and 200:1, respectively. These  
engine systems are designed to provide 5:1  
throttling and off-design mixture ratio operation.  
The study effort also included the effects of  
variations in certain design parameters on engine  
performance, weight, propellant flow balances, life  
capability, development time and cost, and  
maintenance requirements. Additional parametric  
information is provided for design thrust levels  
between 8000 and 50,000 pounds. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 881 744 21/8.1 22/2

PRATT AND WHITNEY AIRCRAFT WEST PALM BEACH FLA FLORIDA  
RESEARCH AND DEVELOPMENT CENTERAir Force Reusable Rocket Engine Program (U)  
XLR129-P-1, Volume I.

DESCRIPTIVE NOTE: Final rept 6 Nov 67-15 Aug 70.

JAN 71 413P Atherton, Robert R. ;

REPT. NO. PWA-FR-3832-Vol-1

CONTRACT: F04611-68-C-0002

MONITOR: AFRPL TR-71-1-Vol-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-881 795.

DESCRIPTORS: (\*CONTROLLABLE-THRUST ROCKET MOTORS, DESIGN), (\*LIQUID PROPELLANT ROCKET ENGINES, SOGSTER ROCKETS), (\*RENDEZVOUS SPACECRAFT, SPACE PROPULSION), COMBUSTION CHAMBERS, ROCKET NOZZLES, INJECTORS, TURBOPUMPS, MANUFACTURING, BUTTERFLY VALVES, CRYOGENIC PROPELLANTS, THRUST VECTOR CONTROL SYSTEMS, CAPTIVE TESTS, COLD FLOW

IDENTIFIERS: LR-129 ENGINES, \*REUSABLE ROCKET MOTORS, SPACE SHUTTLES, XLR-129-P-1 ENGINES (U)

The objective of this program was to demonstrate the performance and mechanical integrity of a 250,000 lb thrust reusable rocket engine designated the XLR129-P-1. The program, sponsored by the Air Force Rocket Propulsion Laboratory, was accomplished by Pratt and Whitney Aircraft at the Florida Research and Development Center and consisted of design and analysis of all engine components and the demonstrator engine. Fabrication and testing of the critical major components was also accomplished. The engine was designed to operate with liquid oxygen and liquid hydrogen propellants, uses the staged combustion cycle, includes a variable thrust, and a variable mixture ratio capability. During the third year, fabrication and testing of certain components such as the preburner injector, transition case, and fuel turbopump was accomplished. Critical control system components such as the preburner oxidizer valve, the preburner fuel valve and static seals were also tested and evaluated. These tests demonstrated the feasibility of these components. (Author)

(U)

AD- 881 744

UNCLASSIFIED

PAGE

42

AD- 879 707

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 879 707 22/2

GOODYEAR AEROSPACE CORP AKRON OHIO

Applications Study of Expandable Space Structures.

(U)

DESCRIPTIVE NOTE: Final rept. Jan-Dec 69,

NOV 70 106P Jurich, Leo ;Hose, Richard

L. ;

REPT. NO. GER-14609

CONTRACT: F33615-69-C-1125

PROJ: AF-8170

TASK: 817004

MONITOR: AFAPL TR-70-45

UNCLASSIFIED REPORT

DESCRIPTORS: (\*EXPANDABLE STRUCTURES, DESIGN), (\*SPACE STATIONS, EXPANDABLE STRUCTURES), (\*MANNED SPACECRAFT, MODULAR SPACE CONSTRUCTION), LAUNCH VEHICLES, CONFIGURATION, DEPLOYMENT, HUMAN FACTORS ENGINEERING, COMPOSITE MATERIALS, INTERFACES, EXTRAVEHICULAR ACTIVITY

IDENTIFIERS: D-21 AIRLOCKS, ORBITAL WORKSHOPS (U)  
(U)

The applications study program was directed toward derivation of concept definitions of expandable crew quarters, experiment chambers, and airlocks to determine how the application of such structures might enhance mission operations of representative orbital vehicle configurations. Configuration studies were conducted and four candidate concepts were developed for evaluation. Materials studies were conducted to investigate the relative merits of using an elastic recovery system or a chemically rigidized system as the expandable structural materials. Parametric analysis and trade-off studies were conducted to select an optimum configuration. The studies indicated that the crew quarter, experiment chamber and airlock could best be designed as one integrated expandable structure module. (Author, modified-PL)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZC007

AD- 875 858 9/5 22/2

AEROSPACE CORP EL SEGUNDO CALIF SYSTEMS ENGINEERING OPERATIONS

Integrated Data Bus Study, (U)

JUL 70 20P Stockett, T. E. ;  
 REPT. NO. TOR-0059(6759-03)-8  
 CONTRACT: F04701-70-C-0059

UNCLASSIFIED REPORT

DESCRIPTORS: (\*INTEGRATED CIRCUITS, RELIABILITY(ELECTRONICS)), (\*RENDEZVOUS SPACECRAFT, CONTROL SYSTEMS), LIFTING REENTRY VEHICLES, MANNED SPACECRAFT, DATA STORAGE SYSTEMS, DATA TRANSMISSION SYSTEMS, CIRCUIT INTERCONNECTIONS, COMPUTERS, MULTIPLEXING, CONFIGURATION

IDENTIFIERS: EARTH TO ORBIT SHUTTLES, EOS(EARTH TO ORBIT SHUTTLES), FAULTS, ISOLATION, SPACE TRANSPORTATION SYSTEMS, \*SPACE SHUTTLES, STS(SPACE TRANSPORTATION SYSTEMS) (U)

The principal component of the Space Transportation System (STS) is the Earth-to-Orbit Shuttle (EOS), which is a large piloted vehicle capable of transporting payloads into low earth orbit and return. A central feature of the EOS is the on-board checkout system, whose operational concepts include pre-flight checkout, in-flight status monitoring, and ground maintenance aids. The OBC is intended to be an integral part of the EOS avionics system. In order to minimize the weight and complexity of the cabling on board the EOS, an Integrated Data Bus (IDB) had been specified. Ideally, only the IDB should be used to interconnect all of the avionics hardware. However, where several components are co-located, there appears to be no objection to the use of subsidiary interconnecting cables (minibusses) provided that such cable runs are very short. Structurally, the IDB may take any convenient form; but, unless some exotic method of data transfer is adopted (such as lasers), the use of standard coaxial cabling is indicated. (Author) (U)

AD- 875 858

UNCLASSIFIED

PAGE

43

AD- 861 021

UNCLASSIFIED

Z0007

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0007

AD- 861 021 21/8 21/2 22/2 22/4

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Effects and Control of Contamination From a Scaled MOL Translational Thruster in a Longitudinal Orientation. (U)

DESCRIPTIVE NOTE: Final rept. May-21 Dec 68,  
 OCT 69 183P Hill, David W. , Jr.; Smith,  
 Date K. ;  
 REPT. NO. AEC-TR-69-152  
 CONTRACT: F40600-69-C-0001  
 PROJ: ARO-SB0721

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO, Inc., Tullahoma, Tenn.  
 DESCRIPTORS: (\*MANNED SPACECRAFT, \*ATTITUDE CONTROL SYSTEMS), (\*SPACE STATIONS, \*CONTROLLABLE-THRUST ROCKET MOTORS), (\*COMBUSTION PRODUCTS, CONTAMINATION), SPACE CAPSULES, SHELLS(STRUCTURAL FORMS), SIMULATION, COMBUSTION CHAMBER GASES, EXHAUST GASES, SAMPLING, DEPOSITS, PULSE SPACING MODULATION, OPTICAL GLASS, COLLECTING METHODS  
 IDENTIFIERS: MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

A test was conducted to determine the effects and control of contamination produced by a 1-lb scaled Manned Orbital Laboratory thruster. The test required firing the 1-lb translational thruster for 205 sec continuously and pulsing in its longitudinal position and determining the effects of contaminants from the thruster impinging on optical and thermal control surface test specimens located on a flat plate exposed to the thruster exhaust plume. The contamination ejected from the thruster in steady-state operation was much less than that of pulse-mode operation. Fences were used on the test plate to shield specimens from the thruster exhaust plume. In situ reflectance, emittance, and transmittance measurements were made on the optical and thermal control surface test specimens surfaces under vacuum conditions and at atmospheric pressure. Pretest and posttest laboratory measurements were made at atmospheric conditions. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 860 583 22/2

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

A Soviet Space Station Soon, (U)

JAN 69 4P Pfaffe.H. :  
REPT. NO. FTD-WT-23-1477-68

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited trans. of Berliner Zeitung (East Germany) n188 p4 1968, by M. Balk.  
DESCRIPTORS: (\*SPACE STATIONS, FEASIBILITY STUDIES), (\*SCIENTIFIC SATELLITES, USSR), STRUCTURAL MEMBERS, ASSEMBLY, MATERIALS, LABORATORIES, GRAVITY(ARTIFICIAL), COMMUNICATION SYSTEMS, LIFE SUPPORT, MANNED SPACECRAFT(U)  
IDENTIFIERS: TRANSLATIONS (U)

A review of Soviet technical literature is reported on realizable designs for a step forward in the development of space exploration. Such a large space station could consist of a combination of solid and inflatable structural elements, assembled in orbit from structural sections of circular shape or with corners. It would be practical to rotate the station around its axis to generate an artificial gravity in the cabins and research rooms. The effect of the artificial gravity would be sufficient to allow a large number of scientists to work in such a station. (U)

AD- 860 583

UNCLASSIFIED

PAGE

44

AD- 860 371

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 860 371 21/2 21/9.1 22/2

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Effects and Control of Contamination from a Scaled MOL Attitude Control Thruster in a Tangential Orientation. (U)

DESCRIPTIVE NOTE: Final rept. May-21 Dec 68,  
OCT 69 111P Hill, David W., Jr.; Smith,  
Dale K. :  
REPT. NO. AEC-TR-69-146  
CONTRACT: F42600-69-C-0001  
PROJ: ARO-S8C721

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO, Inc., Tullahoma, Tenn.  
DESCRIPTORS: (\*MANNED SPACECRAFT, ATTITUDE CONTROL SYSTEMS), (\*SPACE STATIONS, LIQUID PROPELLANT ROCKET ENGINES), (\*LIQUID PROPELLANT ROCKET ENGINES, COMBUSTION DEPOSITS), SPACE CAPSULES, MONOPROPELLANTS, CONTAMINATION, CRYOPUMPING, HEAT TRANSFER, PULSE DURATION MODULATION, COMBUSTION PRODUCTS, TEST METHODS  
IDENTIFIERS: MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), ROCKET EXHAUST (U)

A test was conducted to determine the effects of contamination produced by a 1-lb-scaled Manned Orbital Laboratory thruster. The test required pulsing the 1-lb attitude control thruster in its tangential position and determining the effects of contaminants from the thruster impinging on optical and thermal control surface test specimens located on a flat plate exposed to the thruster exhaust plume. The thruster was pulsed with durations of 20, 50, 100, and 1000 msec with 1000 msec off time at altitudes above 400,000 ft. In situ reflectance, emittance, and transmittance measurements were made on optical and thermal control surface test specimens under vacuum conditions and at atmospheric pressure. Pretest and posttest laboratory measurements were also made. Significant contamination was produced for the pulse-mode operation, and the amount of contamination produced decreased as the thruster pulse duration increased. (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 860 050 21/2 22/4 22/2

AERJET-GENERAL CORP SACRAMENTO CALIF LIQUID ROCKET  
DIVProgram Titan IIIM Standard Space Launch  
Vehicle Component Development Report for the  
Titan IIIM Stage I Combustion Chamber, (U)SEP 69 235P Nord.W. J. ;  
REPT. NO. AGC-9180-941-DR-3  
CONTRACT: AF 64(695)-941

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-822 493L and AD-385  
082L.DESCRIPTORS: (\*MANNED SPACECRAFT, LAUNCH VEHICLES),  
(\*SPACE STATIONS, LAUNCH VEHICLES), (\*COMBUSTION  
CHAMBERS, DESIGN), SPACE CAPSULES, ALLOYS,  
MANUFACTURING, HEAT TRANSFER, STRESSES, FUEL INJECTION,  
PROPELLANT CONTROL, STRUCTURAL PROPERTIES (U)  
IDENTIFIERS: GEMINI; \*GEMINI B PROJECT; \*MANNED  
ORBITAL LABORATORIES, NICKEL ALLOY HASTELLOY ALLOY X,  
TITAN 3 (U)The increased thrust, higher engine performance,  
and greater reliability requirements of the Titan  
IIIM engines for application to the Manned  
Orbital Laboratory Program necessitated  
extensive redesign of the thrust chamber assembly as  
well as other major components for the Stage I  
engine. The report encompasses the design and  
development of the combustion chamber. (Author) (U)

AD- 860 050

UNCLASSIFIED

PAGE

45

AD- 859 551

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 859 551 22/2 20/4

MCDONNELL DCUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN  
DIVGemini: B Aerodynamic Data Book. Volume  
I. Aerodynamic Coefficients. (U)DEC 68 236P  
REPT. NO. F203

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Revision of Report dated 8 Mar  
67.DESCRIPTORS: (\*MANNED SPACECRAFT, AERODYNAMIC  
CHARACTERISTICS), (\*SPACE STATIONS, AERODYNAMIC  
CHARACTERISTICS), TABLES(DATA), SPACE CAPSULES, DATA  
TABLES, ASCENT TRAJECTORIES, ATMOSPHERE ENTRY, RETRO  
ROCKETS, EXPERIMENTAL DATA, ADAPTERS, ABORT  
IDENTIFIERS: \*AERODYNAMIC CHARACTERISTICS, GEMINI,  
\*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES,  
\*MOL(MANNED ORBITING LABORATORIES) (U)The static and dynamic aerodynamic coefficients  
that are required to define the aerodynamic behavior  
of the several flight configurations of the Gemini  
B System Segment of the USAF Manned  
Orbiting Laboratory Program are presented in  
graphical and tabular form. Sources of information  
and methods used in deriving the final coefficients  
are provided. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 859 311 14/2 22/2

DOUGLAS AIRCRAFT CO INC HUNTINGTON BEACH CALIF MISSILE AND SPACE SYSTEMS DIV

MOL Ground Test Plan. Qualification Test Plan. Sequence Number B286.

MAY 67 329P  
REPT. NO. DAC-57178  
CONTRACT: F04695-67-C-0029

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CHECKOUT PROCEDURES), (\*SPACE STATIONS, CHECKOUT PROCEDURES), SPACE CAPSULES, INSTRUCTION MANUALS, ENVIRONMENTAL TESTS, MAINTENANCE, TEST METHODS, GROUND SUPPORT EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The document defines the qualification ground test program for the engineering development phase of the Manned Orbiting Laboratory (MOL) program. (Author) (U)

AD- 859 311

UNCLASSIFIED

PAGE

46

AD- 859 127

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 859 127 22/2

GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE DIV

Verification Test Plan for Environmental Control Unit CEI 109A. Data Item No. UT-454,

(U)

FEB 69 13P Fleckenstein, H. P. ;  
CONTRACT: F04695-67-C-0018

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED ATMOSPHERES), (\*SPACE STATIONS, AIR CONDITIONING EQUIPMENT), SPACE CAPSULES, POWER EQUIPMENT, FUEL TANKS, SPACE ENVIRONMENTS, SOLAR RADIATION, REFRIGERATION SYSTEMS, HEATERS, TURBINES, ELECTRICAL EQUIPMENT, TEST METHODS, FLUID FILTERS, FUEL CONSUMPTION (U)  
IDENTIFIERS: GEMINI, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

Testing was conducted during design and fabrication of first environmental control unit for design feasibility, verification, and design optimization purposes. These tests will help to determine the most effective method for flow, temperature, and humidity control, as well as the preliminary tests necessary for adjustment and calibration of the overall system. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 859 125 13/6 22/2

AMF YORK PA

Procedural Support Data MOL Mission Module  
Transporter.

(U)

NOV 68 65P

REPT. NO. AMF-372-13008

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, TRANSPORTATION),  
(\*SPACE STATIONS, TRANSPORTATION), (\*TRAILERS,  
PERFORMANCE(ENGINEERING)), SPACE CAPSULES, GROUND  
SUPPORT EQUIPMENT, MAINTENANCE, TEST METHODS, SUSPENSION  
DEVICES, GEARS, BRAKES, HYDRAULIC EQUIPMENT, PNEUMATIC  
DEVICES (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The manual contains information pertaining to  
ground system test procedures, operation and  
maintenance of the MOL Mission Module  
Transporter. The MOL Mission Module  
Transporter (MMT) is a semi-trailer, which is  
used to support and transport the MOL Mission  
Module and accessory support equipment. A towing  
vehicle (prime mover) is required to move the  
MMT. It is designed for either day or night  
operation over conventional highways and has the  
capability of being loaded with the module onto a  
C-133B aircraft for in-flight shipment.  
(Author) (U)

AD- 859 125

UNCLASSIFIED

PAGE

47

AD- 859 093

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 859 098 5/1 14/4 22/2

GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE  
DIVQuality Assurance Plan for CRDL Item No.  
R015. Data Item No. UR-418.

(U)

APR 69 131P

PROJ: MP-2973

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, QUALITY CONTROL),  
(\*SPACE STATIONS, QUALITY CONTROL), (\*QUALITY CONTROL,  
SPECIFICATIONS), SPACE CAPSULES, MANAGEMENT PLANNING AND  
CONTROL, COST EFFECTIVENESS, DESIGN, INVENTORY CONTROL,  
PRODUCTION CONTROL, PROCUREMENT, MANUFACTURING,  
HANDLING, ENVIRONMENTAL TESTS, NONDESTRUCTIVE TESTING,  
VISUAL INSPECTION, ELECTRICAL PROPERTIES, TEST METHODS,  
TEST EQUIPMENT, LIFE EXPECTANCY, RELIABILITY,  
PERFORMANCE(ENGINEERING), INDUSTRIAL TRAINING, PERSON (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORY, \*MOL(MANNED ORBITING  
LABORATORY) (U)

The MOL Quality Assurance Plan describes the  
Quality program to be undertaken by the General  
Electric Company Space Systems Organization  
in the fulfillment of its MOL Phase II Contract  
with the Space Systems Division of the United  
States Air Force. The quality program is  
designed to provide effective controls which will  
result in contractually compliant end items in all  
phases of the contract from customer specifications  
through design, procurement, manufacture, test and  
flight. The Quality Assurance Plan will  
embody all the quality-related specifications and  
documents negotiated in the MOL contract as being  
applicable to the MOL Program. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 859 096 22/4 14/2

GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE  
DIV

Checkout System Requirements CITE 400  
A. (U)

MAR 69 83P

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, PAYLOAD), (\*SPACE STATIONS, PAYLOAD), (\*PAYLOAD, CHECKOUT EQUIPMENT), SPACE CAPSULES, COMPUTER PROGRAMMING, DIGITAL COMPUTERS, TELEMETRY SYSTEMS, COMMAND AND CONTROL SYSTEMS, POWER SUPPLIES, COMMUNICATION SYSTEMS, DISPLAY SYSTEMS, CONTROL PANELS, PROGRAMMING LANGUAGES, SPACE NAVIGATION, THERMAL PROPERTIES, VACUUM, RECORDING SYSTEMS  
IDENTIFIERS: ENVIRONMENTAL CONTROL, GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The specification establishes the requirements for performance of the checkout system used to perform tests on the mission payload systems segment of the Manned Orbiting Laboratory. It includes requirements for the checkout system used during environmental testing as well as during ambient testing. (Author) (U)

AD- 859 096

UNCLASSIFIED

PAGE

48

AD- 859 095

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 859 095 22/4

SPACE AND MISSILE SYSTEMS ORGANIZATION LOS ANGELES AIR  
FORCE STATION CALIF

MOL-CITE Hardware/Software Interface  
Definition Document. Revision B. (U)

AUG 68 115P

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, TEST SETS), (\*SPACE STATIONS, TEST SETS), COMPUTER PROGRAMMING, DIGITAL COMPUTERS, INTERFACES, CHECKOUT EQUIPMENT  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of this document is to describe CITE hardware with respect to its interface with the CITE software. Included are short subsystem descriptions, lists and descriptions of computer-issued CITE commands and controls and CITE status acquisition commands, and descriptions of the CITE interface with computer memory and the interrupt subsystem. The document discusses each CITE subsystem separately. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 859 093

22/4

DOUGLAS AIRCRAFT CO INC HUNTINGTON BEACH CALIF MISSILE  
AND SPACE SYSTEMS DIV

CITE Interfaces.

(U)

AUG 68 121P

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, TEST SETS), (\*SPACE  
STATIONS, TEST SETS), CHECKOUT EQUIPMENT,  
INTERCOMMUNICATION SYSTEMS, INTERFACES, SPECIFICATIONS,  
COMPUTER PROGRAMMING (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The document provides interface specifications for  
ground support equipment. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 859 092

22/4

14/2

GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE  
DIV

Contract End Item Design Performance/  
Verification. Test Procedures for MOL  
Computer Integrated Test Equipment for  
Mission Payload System Segment (MOL-CITE-  
MPSS) CDRL Item No. T-050 Data Item No.  
UT-451. (U)

APR 69 144P

UNCLASSIFIED REPORT

Availability: microfiche copies only.  
DESCRIPTORS: (\*MANNED SPACECRAFT, PAYLOAD), (\*SPACE  
STATIONS, PAYLOAD), (\*PAYLOAD, CHECKOUT EQUIPMENT),  
SPACE CAPSULES, TEST METHODS, DESIGN, COMPATIBILITY,  
DIGITAL COMPUTERS, COMPUTER PROGRAMMING, VISUAL  
INSPECTION, RELIABILITY, STANDARDS (U)  
IDENTIFIERS: AEROSPACE VEHICLE EQUIPMENT, GEMINI,  
\*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES,  
\*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the document is to provide a  
detailed procedure which specifies the test/analysis  
to be conducted on the first article of each specific  
configuration to verify the design compatibility with  
the mission payload system segment, aerospace vehicle  
equipment, and to verify that the design meets the  
CEI specification requirements. (Author) (U)

AD- 859 093

UNCLASSIFIED

PAGE

49

AD- 859 092

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 177 10/2 14/2 22/2

MCDONNELL CO ST LOUIS MO

Operation and Service Manual for Time Code  
Generator 52E440027 and Timing Distribution  
System 52E440065.

MAR 67 48P

REPT. NO. 85-10-118

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, GENERATORS), (\*SPACE STATIONS, GENERATORS), (\*TIMING DEVICES, INSTRUCTION MANUALS), SPACE CAPSULES, DESIGN, TOOL KITS, OPERATION, CALIBRATION, MAINTENANCE (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of this space technical data report (STDR) is to familiarize personnel with the operation and service instructions for a timing distribution system and a time code generator. The STDR presents a description of the system, its controls and functions and servicing instructions for preventive maintenance. (Author) (U)

AD- 857 177

UNCLASSIFIED

PAGE

50

AD- 857 176

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 176 10/2 22/2

MCDONNELL CO ST LOUIS MO

Operation and Service Manual for Spacecraft  
Battery Charger 52E230075.

MAR 67 33P Cane, Paul T. ;

REPT. NO. 85-10-54

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, BATTERY CHARGERS), (\*SPACE STATIONS, BATTERY CHARGERS), (\*BATTERY CHARGERS, INSTRUCTION MANUALS), SPACE CAPSULES, DESIGN, OPERATION, CALIBRATION, MAINTENANCE, TEST METHODS, STORAGE (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the space technical data report (STDR) is to familiarize personnel with the operation and service instructions for a spacecraft battery charger. The STDR presents a description of the charger, its controls, and functions and the servicing instructions for preventive maintenance. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 857 175 9/1 14/2 22/2

MCDONNELL CO ST LOUIS MO

Operation and Service Manual for Control  
Relay EFC Tester 52E230014, (U)FEB 67 35P Smith, Richard A. ;  
REPT. NO. 85-10-49  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ELECTRIC RELAYS),  
(\*SPACE STATIONS, ELECTRIC RELAYS), (\*ELECTRIC RELAYS,  
TEST EQUIPMENT), SPACE CAPSULES, CHECKOUT EQUIPMENT, (U)  
INSTRUCTION MANUALS, DESIGN, OPERATION, MAINTENANCE, (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of this space technical data report  
(STDR) is to familiarize personnel with the  
operation and service instructions for a control  
relay, EFC (equipment functional check) tester.  
The STDR presents a description of the unit, its  
controls and functions, and servicing instructions  
for preventive maintenance. (Author) (U)

AD- 857 175

UNCLASSIFIED

PAGE

51

AD- 857 174

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 857 174 14/2 17/7 22/2

MCDONNELL CO ST LOUIS MO

Operation and Service Manual for IMU  
Auxiliary Age Platform Alignment Mount  
Reference 52E270006, IMU Test Point Panel  
52E270008, Three-Axis Platform Dolly  
52E270036, IMU Test Cable Set 52E270053, (U)FEB 67 79P Price, Harry J. ;  
REPT. NO. 85-10-59  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, STABILIZED PLATFORMS),  
(\*SPACE STATIONS, STABILIZED PLATFORMS), (\*STABILIZED  
PLATFORMS, CHECKOUT EQUIPMENT), SPACE CAPSULES,  
INSTRUCTION MANUALS, ALIGNMENT, MAINTENANCE,  
CALIBRATION, MIRRORS, ELECTRONIC EQUIPMENT, GYROSCOPE (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service instructions  
for the Inertial Measuring Unit (IMU)  
Auxiliary Aerospace Ground Equipment (AGE).  
The AGE comprises the following end items: the  
Platform Alignment Mount Reference, the IMU  
Test Point Panel, the Three-Axis Platform  
Dolly, and the IMU Test Cable Set. The  
report describes the AGE, their components and  
functions. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 173 10/2 22/2

MCDONNELL CD ST LOUIS MO

Operation and Service Manual for ACPU EFC  
Charger/Tester 52E270071, (U)JAN 67 41P Price, Harry J. ;  
REPT. NO. 85-10-76  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, BATTERY CHARGERS),  
(\*SPACE STATIONS, BATTERY CHARGERS), (\*BATTERY CHARGERS,  
INSTRUCTION MANUALS), TEST EQUIPMENT, SPACE CAPSULES,  
CABLE ASSEMBLIES, STORAGE BATTERIES, DESIGN, OPERATION,  
CALIBRATION, MAINTENANCE (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*WOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the space technical data report  
(STDR) is to familiarize personnel with the  
operation and service of an auxiliary computer power  
unit (ACPU) equipment functional checkout (EFC)  
charger/tester. The STDR describes the charger/  
tester, its panels, assemblies and functions.  
(Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 172 14/2 19/1 22/2

MCDONNELL CC ST LOUIS MO

Operation and Service Manual for Portable  
Pyrotechnic Tester 52E400004, (U)FEB 67 34P Smith, Richard A. ;  
REPT. NO. 85-10-87  
CONTRACT: FC4695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, EXPLOSIVES  
INITIATORS), (\*SPACE STATIONS, EXPLOSIVES INITIATORS),  
(\*EXPLOSIVES INITIATORS, TEST EQUIPMENT), SPACE  
CAPSULES, INSTRUCTION MANUALS, CHECKOUT EQUIPMENT,  
CONTROL PANELS, ELECTRIC CABLES, ADAPTERS, ELECTRICAL  
PROPERTIES, FIRING CIRCUITS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*WOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service instructions  
of the Portable Pyrotechnic Tester. The  
report presents a description of the unit, its  
controls and functions and servicing instructions for  
preventive maintenance. (Author) (U)

AD- 857 173

UNCLASSIFIED

PAGE

52

AD- 857 172

UNCLASSIFIED

ZOM07



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 171 14/2 9/6 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for PCM  
Telemetry Ground Station 52E440011.

(U)

APR 68 526P  
REPT. NO. B5-10-105  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, TELEMETER SYSTEMS),  
(\*SPACE STATIONS, TELEMETER SYSTEMS), (\*TELEMETER  
SYSTEMS, TEST EQUIPMENT), SPACE CAPSULES, INSTRUCTION  
MANUALS, CONTROL PANELS, INDICATOR LIGHTS, MAINTENANCE,  
CALIBRATION, GROUND SUPPORT EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service of the PCM  
Telemetry Ground Station. The report  
describes the ground station equipment racks,  
associated panels and their functions. This  
equipment is used in conjunction with related  
Aerospace Ground Equipment (AGE) to evaluate  
telemetry transmissions from the spacecraft and to  
verify the spacecraft telemetry equipment during  
prelaunch testing. (Author) (U)

AD- 857 171

UNCLASSIFIED

PAGE

53

AD- 857 170

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 170 9/1 14/2 22/2

MCDONNELL CC ST LOUIS MO

Operation and Service Manual for Relay  
Panel EFC Console 52E230010,

(U)

APR 67 66P Cowan, Jon M. ;  
REPT. NO. B5-10-47  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ELECTRIC RELAYS),  
(\*SPACE STATIONS, ELECTRIC RELAYS), (\*ELECTRIC RELAYS,  
RELIABILITY(ELECTRONICS)), SPACE CAPSULES, CONTROL  
PANELS, POWER SUPPLIES, ELECTRICAL RESISTANCE,  
MAINTENANCE, TEST EQUIPMENT, INSTRUCTION MANUALS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service of the  
Relay Panel EFC Console. The report provides  
a functional description of the console, functions of  
switches, controls and indicators, and operation as  
related to Equipment Function Checkout (EFC)  
of relay panels in the Gemini B Spacecraft.  
(Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 169 19/1 22/2

MCDONNELL CO ST LOUIS MO

Operation and Service Manual for Squib Simulator 52E400005.

(U)

JUN 67 28P

REPT. NO. 85-10-88

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, EXPLOSIVES INITIATORS), (\*SPACE STATIONS, EXPLOSIVES INITIATORS), (\*EXPLOSIVES INITIATORS, MODELS(SIMULATIONS)), SPACE CAPSULES, INSTRUCTION MANUALS, CONTROL PANELS, INDICATOR LIGHTS, MAINTENANCE, CALIBRATION, VOLTAGE (U)  
 IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the report is to familiarize personnel with the operation and service instructions of the Squib Simulator. The report presents a description of the simulator, its panels and its function during simulated flight and stray voltage tests and servicing instructions for preventive maintenance. (Author) (U)

AD- 857 169

UNCLASSIFIED

PAGE

54

AD- 857 168

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 168 14/2 6/11 22/2

MCDONNELL DCUGLAS CORP ST LOUIS MO

Operation and Service Manual for Standard Temperature Monitor System 52E440044 and Harness Assembly 52E440033.

(U)

DESCRIPTIVE NOTE: Space technical date rept., SEP 67 27P Long,Donald ;

REPT. NO. 85-10-107

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED ATMOSPHERES), (\*SPACE STATIONS, CONTROLLED ATMOSPHERES), (\*DETECTORS, TEMPERATURE), SPACE CAPSULES, INSTRUCTION MANUALS, CONTROL PANELS, INDICATOR LIGHTS, MAINTENANCE, CALIBRATION, TEST EQUIPMENT (U)  
 IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*VOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the report (STDR) is to familiarize personnel with the operation and service instructions for the Standard Temperature Monitor System and the Standard Temperature Harness Assembly. The report describes the Monitor System and Harness Assembly, its panels, and functions as related to supplying a temperature reference for the spacecraft temperature sensors. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 167 14/2 17/7 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for IMU  
Pressurization Kit 52E270010.

(U)

DESCRIPTIVE NOTE: Space technical data rept.

SEP 68 22P

REPT. NO. B5-10-61

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, STABILIZED PLATFORMS),  
(\*SPACE STATIONS, STABILIZED PLATFORMS), (\*STABILIZED  
PLATFORMS, PRESSURIZATION), SPACE CAPSULES, INSTRUCTION  
MANUALS, TEST EQUIPMENT, PRESSURE GAGES, MAINTENANCE, (U)  
CALIBRATION, CHECKOUT EQUIPMENT  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service instructions  
for the Inertial Measuring Unit (IMU)  
Pressurization Kit. The pressurization kit is  
used to pressurize and/or re-pressurize the Gemini  
B Spacecraft IMU package. The report  
presents a description of the pressurization kit, its  
controls and their functions, and servicing  
instructions for preventive maintenance.  
(Author) (U)

AD- 857 167

UNCLASSIFIED

PAGE

55

AD- 857 166

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 166 14/2 17/7 22/2

MCDONNELL DCUGLAS CORP ST LOUIS MO

Operation and Service Manual for Computer  
EFC Test Console 52E270023. Volume II.

(U)

JUN 68 411P

REPT. NO. B5-10-64-Vol-2

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3, Part 1, AD-  
856 793 and Volume 3, Part 2, AD-856 794.  
DESCRIPTORS: (\*MANNED SPACECRAFT, NAVIGATION COMPUTERS),  
(\*SPACE STATIONS, NAVIGATION COMPUTERS), (\*NAVIGATION  
COMPUTERS, CHECKOUT EQUIPMENT), SPACE CAPSULES,  
INSTRUCTION MANUALS, CONTROL PANELS, INDICATOR LIGHTS,  
MAINTENANCE, CALIBRATION, DIGITAL COMPUTERS, GROUND  
SUPPORT EQUIPMENT, INERTIAL GUIDANCE, TEST EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of Volume II of this Space  
Technical Data Report (STDR) is to  
familiarize personnel with the operation and service  
instructions for the Test Program Console  
(TPC) which is part of the Computer Equipment  
Functional Checkout (EFC) Test Console.  
The Computer EFC Test Console is a unit of  
the Aerospace Ground Equipment (AGE) for the  
Inertial Guidance System (IGS) and Digital  
Computer used in the Gemini Spacecraft.  
(Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 165 17/7 22/4

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for Computer System Test Console 52E270003. Volume 2. (U)

NOV 68 499P

REPT. NO. 85-10-58-Vol-2

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-856 791L.

DESCRIPTORS: (\*MANNED SPACECRAFT, NAVIGATION COMPUTERS), (\*SPACE STATIONS, NAVIGATION COMPUTERS), (\*NAVIGATION COMPUTERS, TEST EQUIPMENT), CHECKOUT EQUIPMENT, GROUND SUPPORT EQUIPMENT, TEST SETS, INSTRUCTION MANUALS, SPACE CAPSULES (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

Volume II is to familiarize personnel with the operation and service instructions for the Computer System Test Console. This tester, commonly called the Test Console Computer System (TCCS), is a unit of the Aerospace Ground Equipment (AGE) used to control the Digital Computer portion of the Inertial Guidance System in the Gemini Spacecraft during system and pre-launch testing. (Author) (U)

AD- 857 165

UNCLASSIFIED

PAGE

56

AD- 857 164

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 164 22/2 14/2

MCDONNELL CC ST LOUIS MO

Operation and Service Manual for Thermocouple Checkout Box 52E440047, (U)

MAR 67 18P

Smith, Richard A. ;

REPT. NO. 85-10-113

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, THERMOCOUPLES), (\*SPACE STATIONS, THERMOCOUPLES), (\*THERMOCOUPLES, TEST EQUIPMENT), CHECKOUT EQUIPMENT, SPACE CAPSULES, INSTRUCTION MANUALS, CONTROL PANELS, OPERATION, MAINTENANCE, MOBILE, STORAGE, TEST METHODS IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the space technical data report (STDR) is to familiarize personnel with the operation and service of a thermocouple checkout box, used for testing spacecraft thermocouples and their associated wiring harnesses. The STDR describes the unit, its controls and their function and contains servicing instructions for preventive maintenance. (Author) (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 857 162 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO HUNTINGTON BEACH CALIF  
WESTERN DIV

MOL Effectiveness Program Status Report.  
First Quarter 1969. Sequence Number B428.  
Data Item No. UR-116. (U)

MAY 69 58P  
REPT. NO. DAC-62815  
CONTRACT: F04695-67-C-0029

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Report dated 28 Feb 69,  
AD-857 161L.  
DESCRIPTORS: (\*MANNED SPACECRAFT, REVIEWS), (\*SPACE  
STATIONS, REVIEWS), SPACE CAPSULES, SCHEDULING, DESIGN,  
AERODYNAMIC CONFIGURATIONS, SPACECRAFT COMPONENTS,  
RELIABILITY, MAINTAINABILITY, ENVIRONMENTAL TESTS, HUMAN  
FACTORS ENGINEERING, QUALITY CONTROL (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The report is issued quarterly and is intended as a  
narrative management summary document which discusses  
status and progress of significant Effectiveness  
Program activities. (Author) (U)

AD- 857 162

UNCLASSIFIED

PAGE

57

AD- 857 161

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 857 161 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO HUNTINGTON BEACH CALIF  
WESTERN DIV

MOL Effectiveness Program Status Report.  
Fourth Quarter 1968. Sequence Number B428.  
Data Item No. UR-116. (U)

FEB 69 52P  
REPT. NO. DAC-62746  
CONTRACT: F04695-67-C-0029

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Report dated 1 May 69,  
AD-857 162L.  
DESCRIPTORS: (\*MANNED SPACECRAFT, REVIEWS), (\*SPACE  
STATIONS, REVIEWS), SPACE CAPSULES, SCHEDULING, DESIGN, (U)  
CONFIGURATION, CONTRACTS, QUALITY CONTROL (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The report is issued quarterly and is intended as a  
narrative management summary document which discusses  
status and progress of significant Effectiveness  
Program activities. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

MCDONNELL DOUGLAS ASTRONAUTICS CO HUNTINGTON BEACH CALIF  
WESTERN DIV

MOL Preliminary Data Report of the MOL  
Protuberance Heat Transfer Test (1A11).  
Volume I. Data Item Number UT-132.

FEB 69 57P  
REPT. NO. DAC-62731  
CONTRACT: F04695-67-C-0029

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, EXTENDABLE STRUCTURES). (\*SPACE STATIONS, EXTENDABLE STRUCTURES). (\*EXTENDABLE STRUCTURES, AERODYNAMIC HEATING), SPACE CAPSULES, MODELS(SIMULATIONS), WIND TUNNELS, THERMOCOUPLES, EXPERIMENTAL DATA, TABLES(DATA), HEAT TRANSFER

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), SKIN(STRUCTURAL MEMBER)

Half-scale models of protuberances unique to the MOL vehicle were constructed and tested. These models included the thruster module assembly, VVSA fairing, and equipment fairing. In addition to these protuberances, a thin floor skin was also constructed. The model construction incorporated a precooling system wherein LN2 was circulated through the models prior to each run. (Author)

(3)

**AD- 857 160**

UNCLASSIFIED

PAGE

85

AD- 857 159

UNCLASSIFIED

20M07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMQ7

AD- 857 153	9/1	22/2
-------------	-----	------

MCDONNELL CC ST LOUIS MO

Operation and Service Manual for Umbilical  
Cable Tester 52E200004.

(5)

MAR 67 50P Petzold, Michael F. :

REPT. NO. 25-10-43

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, POWER SUPPLIES), (\*SPACE STATIONS, POWER SUPPLIES), (\*ELECTRIC CABLES, RELIABILITY/ELECTRONICS), SPACE CAPSULES, INSTRUCTION MANUALS, CONTROL PANELS, OPERATION, MAINTENANCE, TEST METHODS, CALIBRATION, STORAGE, ELECTRIC CONNECTORS (U) IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*VOL(MANNED ORBITING LABORATORIES)

The purpose of the space technical data report (STR) is to familiarize personnel with the operation and service of an umbilical cable tester. The STR presents a description of the tester, its controls and functions, and servicing instructions for preventive maintenance. (Author)

(5)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 158 21/9.1 22/2

MCDONNELL CO ST LOUIS MO

Operation and Service Manual for Fuel and  
Oxidizer Flush and Purge Units 52E420008,  
52E420024.

(U)

APR 67 72P

REPT. NO. 85-10-93

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, LIQUID ROCKET  
PROPELLANTS), (\*SPACE STATIONS, LIQUID ROCKET  
PROPELLANTS), (\*LIQUID ROCKET PROPELLANTS, PURGING),  
SPACE CAPSULES, LIQUID ROCKET OXIDIZERS, NITROGEN,  
PROPELLANT TANKS, DRAINAGE, VALVES, MAINTENANCE, GROUND  
SUPPORT EQUIPMENT, INSTRUCTION MANUALS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service instructions  
for the Fuel Flush and Purge Unit and the  
Oxidizer Flush and Purge Unit. The report  
contains a description of the units, their controls  
and functions; servicing instructions for preventive  
maintenance; and applicable safety precautions  
associated with their operation. (Author) (U)

AD- 857 158

UNCLASSIFIED

PAGE

59

AD- 857 157

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 157 14/2 17/7 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for ACPU System  
Tester 52E270086.

(U)

DESCRIPTIVE NOTE: Space technical data rept.

AUG 68 29P

REPT. NO. 85-10-77

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, NAVIGATION COMPUTERS),  
(\*SPACE STATIONS, NAVIGATION COMPUTERS), (\*NAVIGATION  
COMPUTERS, CHECKOUT EQUIPMENT), SPACE CAPSULES,  
INSTRUCTION MANUALS, CONTROL PANELS, MAINTENANCE,  
CALIBRATION, POWER SUPPLIES, TEST EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service instructions  
for the Auxiliary Computer Power Unit (ACPU)  
System Tester. The ACPU System Tester is  
used to functionally check the operation of the  
auxiliary computer power unit in the spacecraft.  
The report presents a description of the tester,  
its controls and indicators, and service instructions  
for preventive maintenance. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 857 156 14/3 17/7 22/2

MCDONNELL CO ST LOUIS MO

Operation and Service Manual for Guidance and  
Control Recorder Assembly 52E270062, (U)

FEB 67 55P Reynolds, H. ;  
REPT. NO. 85-10-73  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, FLIGHT CONTROL  
SYSTEMS), (\*SPACE STATIONS, FLIGHT CONTROL SYSTEMS),  
(\*RECORDING SYSTEMS, INSTRUCTION MANUALS), SPACE  
CAPSULES, DESIGN, CONTROL, OPERATION, TEST EQUIPMENT, (U)  
MAINTENANCE, CHECKOUT PROCEDURES  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of this space technical data report  
(STDR) is to familiarize personnel with the  
operation and service instructions for a guidance and  
control recorder assembly, used to record spacecraft  
guidance and control system parameters during  
spacecraft system tests and prelaunch operation.  
The STDR presents a description of the recorder,  
its controls and functions, and servicing  
instructions for preventive maintenance.  
(Author) (U)

AD- 857 156

UNCLASSIFIED

PAGE

60

AD- 857 155

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 857 155 14/2 6/11 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for First and  
Second Stage Facility N2 Regulators  
52E420136, 52E420056. (U)

DESCRIPTIVE NOTE: Space technical data rept.  
AUG 68 28P  
REPT. NO. 85-10-98  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED  
ATMOSPHERES), (\*SPACE STATIONS, CONTROLLED ATMOSPHERES),  
(\*NITROGEN, CONTROL SYSTEMS), SPACE CAPSULES,  
INSTRUCTION MANUALS, GROUND SUPPORT EQUIPMENT, DESIGN, (U)  
SAFETY, OPERATION, CALIBRATION, MAINTENANCE  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES), REGULATORS (U)

The purpose of this space technical data report  
(STDR) is to familiarize personnel with the  
operation and service instructions for two first and  
second stage facility nitrogen regulators used to  
reduce the facility nitrogen supply pressure for use  
in the umbilical tower and environmental enclosure at  
the launch site. The STDR presents a description  
of the units, their controls and functions and  
servicing instructions for preventive maintenance.  
(Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 154

22/2

MCDONNELL CO ST LOUIS MO

Operation and Service Manual for Attitude Indicator EFC Console 52E270035, (U)

JAN 67 68P McElvain, M. ;  
 REPT. NO. 85-10-67  
 CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ATTITUDE CONTROL SYSTEMS), (\*SPACE STATIONS, ATTITUDE CONTROL SYSTEMS), (\*ATTITUDE CONTROL SYSTEMS, CHECKOUT EQUIPMENT), SPACE CAPSULES, INSTRUCTION MANUALS, CONTROL PANELS, GROUND SUPPORT EQUIPMENT, FLIGHT CONTROL SYSTEMS, MAINTENANCE, CALIBRATION (U)  
 IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*VOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the report is to familiarize personnel with the operation and service of the Attitude Indicator EFC Console. The report presents a description of the console, functions of its components, and preventive maintenance instructions. (Author) (U)

AD- 857 154

UNCLASSIFIED

PAGE

61

AD- 857 153

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 153

17/7 22/2

MCDONNELL CO ST LOUIS MO

Operation and Service Manual for Guidance and Control EFC Recorder 52E270069, (U)

JAN 67 27P Cowan, Jon M. ;  
 REPT. NO. 85-10-75  
 CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, FLIGHT CONTROL SYSTEMS), (\*SPACE STATIONS, FLIGHT CONTROL SYSTEMS), (\*RECORDING SYSTEMS, TEST EQUIPMENT), SPACE CAPSULES, INSTRUCTION MANUALS, CHECKOUT EQUIPMENT, CONTROL PANELS, GROUND SUPPORT EQUIPMENT, MAINTENANCE, CALIBRATION (U)  
 IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*VOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the report is to familiarize personnel with the operation and service of the Guidance and Control EFC Recorder. The report describes the console, its panels and its functions. The Guidance and Control EFC Recorder is used to record guidance and control parameters during EFC tests. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 152 9/1 22/2

MCDONNELL CO ST LOUIS MO

Operation and Service Manual for Ratiometer  
52E440036, (U)FEB 67 30P Petzold, Michael F. ;  
REPT. NO. B5-10-108  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, TRANSDUCERS), (\*SPACE STATIONS, TRANSDUCERS), (\*TRANSDUCERS, CALIBRATION), SPACE CAPSULES, CHECKOUT EQUIPMENT, INSTRUCTION MANUALS, CONTROL PANELS, PRESSURE, MAINTENANCE (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), \*RATIOMETERS (U)

The purpose of the report is to familiarize personnel with the operation and service of the Ratiometer. The report presents a description of the unit, its controls and functions, and servicing instructions for preventive maintenance. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 151 14/2 22/2

MCDONNELL CO ST LOUIS MC

Operation and Service Manual for  
Accelerometer Static Test Unit 52E440039. (U)FEB 67 20P  
REPT. NO. B5-10-110  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ACCELEROMETERS), (\*SPACE STATIONS, ACCELEROMETERS), (\*CHECKOUT EQUIPMENT, INSTRUCTION MANUALS), SPACE CAPSULES, CALIBRATION, CONTROL PANELS, MAINTENANCE (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the report is to familiarize personnel with the operation and service of the accelerometer static test unit. The report presents a description of the unit, its controls and functions, and servicing instructions for preventive maintenance. (Author) (U)

AD- 857 152

UNCLASSIFIED

PAGE

62

AD- 857 151

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 149 9/5 17/7 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Computer  
Data Display System 58E270803.

DEC 67 128P

REPT. NO. 85-10-81

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, NAVIGATION COMPUTERS),  
(\*SPACE STATIONS, NAVIGATION COMPUTERS), (\*NAVIGATION  
COMPUTERS, DISPLAY SYSTEMS), SPACE CAPSULES, TELEMETER  
SYSTEMS, CHECKOUT PROCEDURES, SIMULATION, MONITORS,  
INSTRUCTION MANUALS, DESIGN, OPERATION, TEST EQUIPMENT.  
VISUAL INSPECTION, MAINTENANCE (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

This manual provides descriptive, operating, and  
maintenance data for a computer data display system.  
The manual is intended for use primarily by  
technical personnel concerned with the operation and  
maintenance of the CDDS. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 147 14/2 21/8.1 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Propulsion  
Components EFC Console 52E420010.

JUN 68 96P

REPT. NO. 85-10-94

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, LIQUID PROPELLANT  
ROCKET ENGINES), (\*SPACE STATIONS, LIQUID PROPELLANT  
ROCKET ENGINES), (\*LIQUID PROPELLANT ROCKET ENGINES,  
CHECKOUT EQUIPMENT), SPACE CAPSULES, INSTRUCTION  
MANUALS, CONTROL PANELS, INDICATOR LIGHTS, MAINTENANCE,  
CALIBRATION, PNEUMATIC DEVICES, HYDRAULIC EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service instructions  
for the Propulsion Components Equipment  
Functional Check (EFC) Console. The  
Propulsion Components Adapter Kit,  
description and operation are also provided due to  
its integral relationship with the console. The  
console and adapter kit are used to perform a  
complete checkout of the Gemini B Propulsion  
System components prior to installation into, or  
after removal from the spacecraft. The report  
presents a description of the units, their controls  
and functions, as related to equipment functional  
testing, and servicing instructions for preventive  
maintenance. (Author) (U)

AD- 857 149

UNCLASSIFIED

PAGE

63

AD- 857 147

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 146 10/3 14/2 22/2

MCDONNELL CO ST LOUIS MO

Operation and Service Manual for Spacecraft  
Battery Balancing Unit 52E230131.

(U)

FEB 67 33P  
REPT. NO. 85-10-56  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, STORAGE BATTERIES),  
(\*SPACE STATIONS, STORAGE BATTERIES), (\*CHECKOUT  
EQUIPMENT, INSTRUCTION MANUALS), SPACE CAPSULES, TEST  
EQUIPMENT, CONTROL PANELS, MAINTENANCE (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service instructions  
of the Spacecraft Battery Balancing Unit.  
The report presents a description of the unit, its  
controls and functions, servicing instructions for  
preventive maintenance. (Author) (U)

AD- 857 146

UNCLASSIFIED

PAGE

64

AD- 857 145

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 145 14/2 17/2.1 22/2

MCDONNELL DCUGLAS CORP ST LOUIS MO

Operation and Service Manual for HF and  
Audio EFC Test Bench 52E19001.

(U)

SEP 67 143P Long,Donald ;  
REPT. NO. 85-10-34  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, TRANSMITTER  
RECEIVERS), (\*SPACE STATIONS, TRANSMITTER RECEIVERS),  
(\*TRANSMITTER RECEIVERS, TEST EQUIPMENT), SPACE  
CAPSULES, INSTRUCTION MANUALS, COMMUNICATION AND RADIO  
SYSTEMS, VOICE COMMUNICATIONS, HIGH FREQUENCY, GROUND  
SUPPORT EQUIPMENT, CONTROL PANELS, INDICATOR LIGHTS,  
MAINTENANCE, CALIBRATION (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service instructions  
for the HF and Audio EFC Test Bench. The  
report describes the test bench, its panels, and  
functions as related to Equipment Functional  
Checkout (EFC) of the Gemini B Voice  
Control Center (VCC) and the spacecraft HF  
Voice Transmitter/Receiver. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 857 144 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Sequential  
System Control and Monitor 52E230004,

(U)

OCT 67 82P McElvain, M. ;  
REPT. NO. 85-10-45  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CHECKOUT PROCEDURES),  
(\*SPACE STATIONS, CHECKOUT PROCEDURES), (\*CHECKOUT  
PROCEDURES, INSTRUCTION MANUALS), SPACE CAPSULES,  
CONTROL PANELS, INDICATOR LIGHTS, MAINTENANCE,  
CALIBRATION, CHECKOUT EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service of the  
Sequential System Control and Monitor. The  
report describes the console, its panels, and its  
functions. The console is used in conjunction with  
related Aerospace Ground Equipment (AGE) to  
control and monitor the Gemini B Sequential  
System during spacecraft systems test.  
(Author) (U)

AD- 857 144

UNCLASSIFIED

PAGE

65

AD- 857 143

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 857 143 13/1 14/2 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for ECS EFC  
Coolant Bench 52E180013.

(U)

SEP 67 74P  
REPT. NO. 85-10-15  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, COOLING), (\*SPACE  
STATIONS, COOLING), (\*COOLING, CHECKOUT EQUIPMENT),  
SPACE CAPSULES, INSTRUCTION MANUALS, CONTROL SYSTEMS,  
NITROGEN, VALVES, MEASURING INSTRUMENTS, MAINTENANCE,  
GROUND SUPPORT EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service of the  
Environmental Control System (ECS) Equipment  
Functional Check (EFC) Coolant Bench.  
The report presents a description of the test  
bench, its controls and functions, and servicing  
instructions for preventive maintenance.  
(Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 142 9/5 22/2

MCDONNELL CO ST LOUIS MO

Operation and Service Manual for DC-DC Converter EFC Console 52E440008, (U)

FEB 67 70P Cowan, Jon M. ;  
 REPT. NO. 85-10-104  
 CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, DC TO DC CONVERTERS), (\*SPACE STATIONS, DC TO DC CONVERTERS), (\*CHECKOUT EQUIPMENT, INSTRUCTION MANUALS), SPACE CAPSULES, CONTROL PANELS, INDICATOR LIGHTS, MAINTENANCE, CALIBRATION (U)  
 IDENTIFIERS: ELECTRIC CONVERTERS, GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the report is to familiarize personnel with the operation and service of the DC-DC Converter EFC Console. The report provides a functional description of the console, functions of switches, controls and indicators, and operation as related to Equipment Function Checkout (EFC) of the Instrumentation DC-DC Converters of the Gemini B Spacecraft. (Author) (U)

AD- 857 142

UNCLASSIFIED

PAGE

66

AD- 857 141

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 141 17/7 14/2 22/2

MCDONNELL CO ST LOUIS MO

Operation and Service Manual for IMU EFC Test Console 52E270032, (U)

MAR 67 200P Cowan, Jon M. ;  
 REPT. NO. 85-10-65  
 CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

Availability: Microfiche copies only.  
 DESCRIPTORS: (\*MANNED SPACECRAFT, STABILIZED PLATFORMS), (\*SPACE STATIONS, STABILIZED PLATFORMS), (\*INERTIAL GUIDANCE, TEST EQUIPMENT), SPACE CAPSULES, INSTRUCTION MANUALS, DESIGN, OPERATION, CALIBRATION, MAINTENANCE, MONITORS (U)  
 IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, INERTIAL MEASURING UNITS, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of this space technical data report (STDR) is to familiarize personnel with the operation and service of an inertial measuring unit (IMU) equipment functional check (EFC) console. The STDR describes the console, its panels, and its functions. The console is used to perform EFC testing of the IMU System components. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 140 14/2 22/2

MCDONNELL CO ST LOUIS MO

Operation and Service Manual for Time  
Reference System EFC Console 52E270012,

(U)

JAN 67 132P Price, Harry J. ;  
REPT. NO. 85-10-62  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, TIMING DEVICES),  
(\*SPACE STATIONS, TIMING DEVICES), (\*TIMING DEVICES,  
MONITORS), SPACE CAPSULES, CONTROL PANELS, CHECKOUT  
EQUIPMENT, ELECTRONIC EQUIPMENT, INSTRUCTION MANUALS,  
GROUND SUPPORT EQUIPMENT, DESIGN, TEST EQUIPMENT, TOOL  
KITS, OPERATION, CALIBRATION, MAINTENANCE (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of this space technical data report  
(STD8) is to familiarize personnel with the  
operation and service of a time reference system  
(TRS) equipment functional checkout (EFC)  
console. This STD8 describes the console, its  
panels and its functions. The console is used in  
conjunction with related aerospace ground equipment  
(AGE). (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 139 6/11 14/2 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN  
DIV

Operation and Service Manual for ECS EFC High  
Pressure Bench 52E180011. (U)

NOV 68 66P  
REPT. NO. 85-10-14  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED  
ATMOSPHERES), (\*SPACE STATIONS, CONTROLLED ATMOSPHERES),  
(\*CHECKOUT EQUIPMENT, INSTRUCTION MANUALS), SPACE  
CAPSULES, PRESSURE, TEST EQUIPMENT, CONTROL PANELS,  
MAINTENANCE, MEASURING INSTRUMENTS, VALVES (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service of the  
Environmental Control System (ECS) Equipment  
Functional Check (EFC) High Pressure Bench.  
The report presents a description of the test  
bench, its controls and functions, and servicing  
instructions for preventive maintenance. (U)  
(Author)

AD- 857 140

UNCLASSIFIED

PAGE

67

AD- 857 139

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 138

6/11 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for ECS Primary  
O2 and Water System Low Pressure Leak  
Rate Tester 52E180194.

(U)

DEC 68 26P

REPT. NO. 85-10-32

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED  
ATMOSPHERES). (\*SPACE STATIONS, CONTROLLED ATMOSPHERES),  
(\*LEAKAGE(FLUID), CHECKOUT PROCEDURES), SPACE CAPSULES,  
INSTRUCTION MANUALS, OXYGEN, WATER, CONTROL SYSTEMS,  
PRESSURE, CONTROL PANELS, MAINTENANCE, CHECKOUT  
EQUIPMENT, SPACECRAFT COMPONENTS (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service instructions  
for the Environmental Control System (ECS)  
Primary O2 and Water System Low Pressure  
Leak Rate Tester. The two configurations are  
physically and functionally identical. The report  
presents a description of the tester, its control and  
indicator functions, and service instructions for  
preventive maintenance. (Author) (U)

AD- 857 138

UNCLASSIFIED

PAGE

68

AD- 857 137

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 137 14/2 6/11 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for ECS Primary  
O2 System High Pressure Leak Rate  
Tester 52E180193.

(U)

DESCRIPTIVE NOTE: Space technical data rept.

DEC 68 21P

REPT. NO. 85-10-20

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED  
ATMOSPHERES). (\*SPACE STATIONS, CONTROLLED ATMOSPHERES),  
(\*OXYGEN, LEAKAGE(FLUID)), SPACE CAPSULES, INSTRUCTION  
MANUALS, CONTROL PANELS, MAINTENANCE, CALIBRATION, TEST  
EQUIPMENT, PRESSURE GAGES (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service instructions  
for the Environmental Control System (ECS)  
Primary O2 System High Pressure Leak  
Rate Tester. The tester consists of two  
carrying cuses and is used to determine spacecraft  
ECS leakages. The report presents a description  
of the tester, its control and indicator functions,  
and service instructions for preventive maintenance.  
(Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 031 22/3 22/2 17/7 9/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Description of Retrograde Time Predict and Orbit Navigation Simulation Program (KAK2) Gemini B. (U)

DESCRIPTIVE NOTE: Guidance and Control Mechanics technical note,

APR 68 35P Carter, J. P. ;  
REPT. NO. McDonnell Douglas-GCTN-73

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, TRANSFER TRAJECTORIES), (\*SPACE STATIONS, TRANSFER TRAJECTORIES), (\*NAVIGATION COMPUTERS, COMPUTER PROGRAMMING), SPACE CAPSULES, ORBITS, ATMOSPHERE ENTRY, RETRO ROCKETS, TIME, MATHEMATICAL PREDICTION, LANDING FIELDS, COMPUTER PROGRAMS, SOFT LANDINGS, SIMULATION (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The report describes the digital program that has been developed to evaluate the orbit navigation and retrograde time prediction modes of the Gemini B computer software. The formulation of the program performs the same functions (in fortran computer language) as the orbit navigation (ONAV) and retrograde time prediction (RTP) modes. In addition, this program provides the capability to determine retrograde times to land at particular landing sites and can be used, in general, for mission planning purposes. (Author) (U)

AD- 857 031

UNCLASSIFIED

PAGE

69

AD- 857 030

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 030 22/3 22/2 9/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Program Description for Digital Six-Degree-of-Freedom Reentry Simulation. Gemini B. (U)

DESCRIPTIVE NOTE: Guidance and Control Mechanics technical note,

JAN 69 104P Kraemer, J. W. ;  
REPT. NO. McDonnell Douglas-GCTN-87

UNCLASSIFIED REPORT

Availability: Microfiche copies only.  
DESCRIPTORS: (\*MANNED SPACECRAFT, DESCENT TRAJECTORIES), (\*SPACE STATIONS, DESCENT TRAJECTORIES), (\*ATMOSPHERE ENTRY, COMPUTER PROGRAMMING), SPACE CAPSULES, SIMULATION, INERTIAL NAVIGATION, TERMINAL GUIDANCE, DIGITAL SYSTEMS, ATTITUDE CONTROL SYSTEMS, AERODYNAMIC LOADING, COMPUTER PROGRAMS (U)  
IDENTIFIERS: CLOSED LOOP SYSTEMS, CONTROL, CONTROL SYSTEMS, GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), SIX DEGREES OF FREEDOM (U)

The report describes a six-degree-of-freedom digital program which is used for simulation of Gemini B reentry and serves as a reference and users guide for the reentry simulation program. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 026 13/6 22/2

GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE  
DIV

Age CEI Design/Performance Verification  
Test Plan for CEI No. MOL 104A.  
Transporter - Mission Module for the Manned  
Orbiting Laboratory (MOL) System. CDRL  
Item No. T014/UT-454.

(U)

MAR 69 9P

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, TRANSPORTATION),  
(\*SPACE STATIONS, TRANSPORTATION), (\*TRAILERS,  
SPECIFICATIONS), SPACE CAPSULES, TOWED VEHICLES,  
CONTROLLED ATMOSPHERES, DETECTORS, SUSPENSION DEVICES,  
VEHICLE BRAKES, TEST METHODS, SPECIFICATIONS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES. \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The report presents a summary of the overall test  
program for the Transporter - Mission Module.  
The test plan is based upon the requirements of  
CEI Specification CP2004A Part I, dated  
19 September 1968. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 021 22/4 9/2

GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE  
DIV

Item Test Plan AGE Test Support  
Programs. CEI No. MOL805A. CDRL Item  
TBD T086. Data Item No. UT-467.

(U)

JUL 68 39P  
REPT. NO. 68SD8056

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, COMPUTER PROGRAMMING),  
(\*SPACE STATIONS, COMPUTER PROGRAMMING), CHECKOUT  
PROCEDURES, SPECIFICATIONS, GROUND SUPPORT EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

This document presents CEI MOL 805A, that plan  
which establishes the detailed requirements,  
criteria, general methods, responsibilities and  
overall planning to confirm that the CEI fulfills  
the specification. (Author) (U)

AD- 857 026

UNCLASSIFIED

PAGE

70

AD- 857 021

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 857 020 22/4 9/2

GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE  
DIV

Item Test Plan (Computer Program) for  
CEI No. MOL801A. Cite Diagnostic and  
Operational Readiness Programs. CDRL Item  
No. 8038. Data Item No. UT-413. (U)

JUN 68 13P  
REPT. NO. SW2482

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, COMPUTER PROGRAMMING),  
(\*SPACE STATIONS, COMPUTER PROGRAMMING), CHECKOUT  
PROCEDURES, SPECIFICATIONS, GROUND SUPPORT EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of this Item Test Plan is to  
establish the detailed requirements, criteria,  
general methods, responsibilities, and overall  
planning for the verification of compliance with  
design/performance requirements for the Computer  
Integrated Test Equipment (CITE) Diagnostic  
and Operational Readiness Program (DORP),  
CEI No. MOL801A, for the MOL-CITE-MPSS  
Checkout System. (Author) (U)

AD- 857 020

UNCLASSIFIED

PAGE

71

AD- 857 019

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 857 019 22/4 9/2

GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE  
DIV

Computer Program Category I Test Plan for  
CEI MOL809A. CDRL Item T108. Data  
Item No. UT-467. (U)

APR 68 35P  
REPT. NO. 69SD8040

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, COMPUTER PROGRAMMING),  
(\*SPACE STATIONS, COMPUTER PROGRAMMING), CHECKOUT  
PROCEDURES, SPECIFICATIONS, GROUND SUPPORT EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

This test plan reflects the total testing of CEI  
MOL809A that is required for acceptance.  
(Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 017 22/2 22/4

GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE DIV

GE-AVE Maintainability Program Plan. CDRL  
Item No. R014. Data Item No. UR-  
417. (U)

MAR 69 23P  
REPT. NO. 69SD8025

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, SPACECRAFT COMPONENTS), (\*SPACE STATIONS, MAINTAINABILITY), SPACE CAPSULES, GROUND SUPPORT EQUIPMENT, QUALITY CONTROL, MAINTENANCE, MANAGEMENT PLANNING AND CONTROL, HUMAN FACTORS ENGINEERING, VALUE ENGINEERING, INTERFACES, SCHEDULING (U)  
IDENTIFIERS: AEROSPACE VEHICLE EQUIPMENT, AVE(AEROSPACE VEHICLE EQUIPMENT), GEMINI, \*GEMINI B PROJECT, MAINTENANCE ANALYSIS, MANAGEMENT INFORMATION SYSTEMS, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of this report is to provide a description of how the contractor plans to develop and conduct the maintainability program for the Mission Module System Segment (MMSS-AVE) and to identify the products of such a plan. The concepts and subsequent delineated plan reflect the planning and progress in the maintainability area to assure that all contractual commitments are met. The plan contains a description of the tasks and activities to be performed and the methods to be employed for evaluation of on-orbit and ground maintenance as an integral part of the system effectiveness effort during the design and development phase. In addition, a demonstration plan is included which establishes the means and schedule to verify compliance with required contractual requirements. (Author) (U)

AD- 857 017

UNCLASSIFIED

PAGE

72

AD- 857 015

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 015 22/4 9/2

GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE DIV

Item Test Procedures for CEI No.  
MOL805A. Age Test Support Programs.  
CDRL Item 1087. Data Item No. UT-  
468. (U)

FEB 69 26P  
REPT. NO. SX2492

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, COMPUTER PROGRAMMING), (\*SPACE STATIONS, COMPUTER PROGRAMMING), CHECKOUT PROCEDURES, SPECIFICATIONS, GROUND SUPPORT EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

This document includes all the Category I test procedures required to qualify CEI MOL805A. AGE Test Support Programs. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 014 13/1 22/2

GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE DIV

CDRL Acceptance Test Plan for Environmental Monitor Unit. Sequence Number T056. Data Item Number UT455. (U)

JAN 69 20P Hillman, R. F. ;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, AIR CONDITIONING EQUIPMENT). (\*SPACE STATIONS, AIR CONDITIONING EQUIPMENT). (\*AIR CONDITIONING EQUIPMENT, MONITORS), SPACE CAPSULES, TEMPERATURE, HUMIDITY, PRESSURE, ACCELERATION, VISUAL INSPECTION, DETECTORS, WARNING SYSTEMS (U)

IDENTIFIERS: \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The function of the Environmental Monitor Unit (EMU) is to sense, alarm and indicate or record the critical environmental parameters during all transport modes of the MOL Mission Module. The test plan describes the tests to which the Environmental Monitor Unit was subjected to verify its functional performance. (Author) (U)

AD- 857 014

UNCLASSIFIED

PAGE

73

AD- 857 013

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 013 13/1 22/2

GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE DIV

CDRL Acceptance Test Plan for Environmental Control Unit. Sequence Number T055. Data Item Number UT-455. (U)

MAR 69 17P Goodhart, F. W. ;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, AIR CONDITIONING EQUIPMENT). (\*SPACE STATIONS, AIR CONDITIONING EQUIPMENT), SPACE CAPSULES, GAS TURBINES, WEIGHT, VISUAL INSPECTION, CALIBRATION, LEAKAGE(FLUID), CONTROL SYSTEMS, ACCELERATION, HUMIDITY, TEMPERATURE, HEATERS, DUCTS, FANS, BLOWERS (U)  
IDENTIFIERS: \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The Environmental Control Unit is an enclosed self-contained system which conditions and circulates air to a shroud-enclosed spacecraft in a closed-loop circulating system in order to control the atmospheric conditions surrounding the spacecraft. The test plan describes the tests to which the Environmental Control Unit (ECU) was subjected to verify its functional performance. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 857 012 13/1 22/2

GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE DIV

CDRL Validation Test plan for Environmental Monitor Unit. Sequence Number T016. Data Item Number UT454.

(U)

FEB 69 21P Trapani, R. G. ;  
REPT. NO. 1585-ETP-066

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, AIR CONDITIONING EQUIPMENT), (\*SPACE STATIONS, AIR CONDITIONING EQUIPMENT), (\*AIR CONDITIONING EQUIPMENT, MONITORS), SPACE CAPSULES, TEMPERATURE, ELECTROMAGNETIC COMPATIBILITY, TEST METHODS, TEST EQUIPMENT, SAFETY, INSTRUCTION MANUALS, WARNING SYSTEMS  
IDENTIFIERS: \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)

(U)

(U)

The report describes the engineering test, utilizing expected extreme temperature and the electromagnetic interference test to be performed on the environmental monitoring unit. The report specifies the tests, test configurations required, test equipment and facilities.

(U)

AD- 857 012

UNCLASSIFIED

PAGE

74

AD- 856 903

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 903 22/1 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Extravehicular Crew Transfer Test Report.

(U)

MAR 69 43P  
REPT. NO. H018  
CONTRACT: F01695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, \*EXTRAVEHICULAR ACTIVITY), (\*SPACE STATIONS, EXTRAVEHICULAR ACTIVITY), SPACE CAPSULES, FLIGHT TESTING, SPACE CREWS, SPACE TOOLS, PRESSURE SUITS, PERFORMANCE(ENGINEERING), PERFORMANCE(HUMAN), TRAINING  
IDENTIFIERS: EVALUATION, GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)

(U)

(U)

This report contains the results of the third extravehicular crew transfer design and development test series whose objectives were to evaluate Gemini B EV crew transfer equipment, items requiring zero 'g' evaluation, crew ingress, and provide familiarization training for one MOL crewman. The Gemini B segment of the Extravehicular Crew Transfer Vehicle and the Ingress-Egress Vehicle were installed in a KC-135 at Wright-Patterson AFB. A total of 95 maneuvers were completed in three flights. Four crewmen participated in the tests wearing MOL Training pressure suit assemblies. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 902 13/12 5/10 22/2

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Analysis of Crew Escape Initiation Response  
Characteristics Form Titan IIIM/Gemini B  
State 'O' Abort Simulation, (U)

APR 68 158P Seenev.P. J. ;Bull,R. F.  
:Bauer,R. J. ;  
REPT. NO. MCASTRO-G151  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, AEROSPACE SYSTEMS),  
(\*SPACE STATIONS, AEROSPACE SYSTEMS), (\*AEROSPACE  
SYSTEMS, \*PERFORMANCE(HUMAN)), SPACE CAPSULES, LAUNCH  
VEHICLES, SPACE CREWS, ABORT, ASCENT TRAJECTORIES, (U)  
DISPLAY SYSTEMS, (U)DISPLAY SYSTEMS  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES), TITAN 3 (U)

Extensive study during the USAF Manned Orbiting  
Laboratory (MOL) Program has identified  
situations and conditions during the ascent phase  
that will force a mission abort and has led to  
selection of crew escape procedures based on launch  
vehicle and spacecraft flight performance. The  
success of these procedures and the assurance of crew  
safety that they represent are highly dependent upon  
a precise sequence of events that is manually  
initiated by the crew. The primary objective was  
to evaluate the crew's capability to respond  
positively and accurately to initiate abort/escape  
action under simulated high stress conditions. The  
secondary objective was to evaluate the overall  
adequacy of the crew displays relative to malfunction  
monitoring during Stage 'O' operation. The  
program objectives have been met by the simulation  
results. The capability of the crew to manually  
perform the abort/escape functions was established  
and the adequacy of the controls and displays was  
demonstrated. (Author) (U)

AD- 856 902

UNCLASSIFIED

PAGE

75

AD- 856 901

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 901 22/2 20/4

MCDONNELL AIRCRAFT CO ST LOUIS MO

Gemini B Re-Entry Module/Adapter  
Attachment Fairing Aerodynamic Heating and  
Pressure Tests in the McDonnell  
Hypervelocity Impulse Tunnel - Series I. (U)

MAY 68 333P  
REPT. NO. MAC-0004-V01-2  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-856 900.  
Revision of report dated 29 Dec 67.  
DESCRIPTORS: (\*MANNED SPACECRAFT, REENTRY VEHICLES),  
(\*SPACE STATIONS, REENTRY VEHICLES), (\*REENTRY VEHICLES,  
\*HYPERSONIC CHARACTERISTICS), SPACE CAPSULES, FAIRINGS,  
AERODYNAMIC HEATING, AERODYNAMIC LOADING, AERODYNAMIC  
CONFIGURATIONS, WIND TUNNEL MODELS, THERMAL  
CONDUCTIVITY, ANGLE OF ATTACK, TABLES(DATA) (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

Tests of a 2 percent Gemini B model were  
conducted in the McDonnell Hypervelocity  
Impulse Tunnel. A total of 25 data producing  
shots were made at Mach numbers ranging from 13 to  
17, and Reynolds numbers per foot ranging from 1.0 x  
10 to the 6th power to 2.0 x 10 to the 6th power.  
The model was tested at angles of attack ranging  
from 160 to 170 degrees. The initial three test  
shots resulted in determining the heat transfer and  
pressure distribution by determining the areas of  
high heating behind the lower re-entry module/adapter  
fairing. This was accomplished by the use of  
thermographic phosphor temperature mapping  
techniques. The remaining 22 test shots determined  
the heat transfer rate and pressure distributions on  
the re-entry module in the area behind the noted  
fairing and along the windward centerline.  
(Author) (U)

UNCLASSIFIED

SEARCH CONTROL NO. ZOM07

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

14/2

AD- 856 899

14/2

22/2

McDonnell Douglas Astronautics Co St Louis MO

McDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Category I Test Plan Gemini B Procedures Simulation.

Category I Test Plan Gemini B

Procedures Simulation.

(U)

SEP 68 50P

SEP 68 50P

REPT. NO. F650

REPT. NO. F650

CONTRACT: F04695-67-C-0023

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-856 901. Revision of report dated 29 Dec 67.  
DESCRIPTORS: (\*MANNED SPACECRAFT, REENTRY VEHICLES), (\*SPACE STATIONS, REENTRY VEHICLES), (\*REENTRY VEHICLES), (\*PERSONAL CHARACTERISTICS), SPACE CAPSULES, FAIRINGS, AERODYNAMIC HEATING, AERODYNAMIC LOADING, AERODYNAMIC CONFIGURATIONS, WIND TUNNEL MODELS, THERMAL CONDUCTIVITY, ANGLE OF ATTACK, TABLES(DATA)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)  
(U)  
(U)

DESCRIPTORS: (\*MANNED SPACECRAFT, SIMULATORS), (\*SPACE STATIONS, SIMULATORS), (\*SIMULATORS, ACCEPTABILITY), SPACE CAPSULES, CONTROL SIMULATORS, FLIGHT SIMULATORS, SPECIFICATIONS, TEST METHODS, PERFORMANCE(ENGINEERING), DESIGN  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)  
(U)  
(U)

Tests of a 9 percent Gemini B model were conducted in the McDonnell Hypervelocity Impulse Tunnel. A total of 25 data producing shots were made at Mach numbers ranging from 13 to 17, and Reynolds number per foot ranging from 1.0 X 10 to the 6th power to 2.0 X 10 to the 6th power. The model was tested at angles of attack of 160 deg, 165 deg, and 170 deg. The initial three test shots assisted in determining the heat transfer and pressure gage locations by determining the areas of high heating behind the lower re-entry module/adaptor fairing. This was accomplished by the use of thermographic phosphor temperature mapping techniques. The remaining 22 test shots determined the heat transfer rate and pressure distributions on the re-entry module in the area behind the noted fairing and along the windward centerline.  
(Author)  
(U)

This report defines the examinations and tests which will be performed on the Gemini B Procedures Simulator (GBPS) during the Category I testing period. Category I tests are performed at the contractor's facility and upon successful completion will be the basis for acceptance of the GBPS for shipment to Vandenberg Air Force Base (VAFB) for Category II testing. (Author)  
(U)

AD- 856 900

UNCLASSIFIED

PAGE

76

AD- 856 899

UNCLASSIFIED

ZOM07



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 856 898 9/2 22/2

MCDONNELL AIRCRAFT CO ST LOUIS MO

Item Test Plan (Computer Program)  
Gemini B Procedures Simulator. Sequence  
Number 29T. Data Item U-7-216.

DEC 67 38P  
REPT. NO. MAC-F573  
CONTRACT: F04695-67-C-0023

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with  
Conductron-Missouri, St. Charles. Revision of  
Report dated 1 Sep 67.  
DESCRIPTORS: (\*MANNED SPACECRAFT, SIMULATION). (\*SPACE  
STATIONS, SIMULATION). (\*COMPUTER PROGRAMMING,  
SIMULATION). SPACE CAPSULES, MATHEMATICAL MODELS, TEST  
METHODS, ACCEPTABILITY, RELIABILITY (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The plan for item testing of the Gemini P  
Procedures Simulator (GBPS) Operational  
Computer Program, CEI 58Y010A, is presented  
in the report. The criteria and requirements for  
qualification of the math models and routines which  
comprise the GBPS Operational Computer Program  
presented in section four of this report are designed  
to verify fulfillment of the performance/design  
requirements applicable to this computer program.  
The general methods, responsibilities and overall  
planning for implementation of this test plan are  
presented. (Author) (U)

AD- 856 898

UNCLASSIFIED

PAGE

77

AD- 856 897

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 856 897 14/2 22/2

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Gemini B Spacecraft Systems Test Plan.

(U)

APR 69 125P  
REPT. NO. E217  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Revision of Report dated 31 May  
68.

DESCRIPTORS: (\*MANNED SPACECRAFT, TEST METHODS). (\*SPACE  
STATIONS, TEST METHODS). SPACE CAPSULES, TESTS,  
SPECIFICATIONS, SAFETY, RELIABILITY, QUALITY CONTROL,  
TEST EQUIPMENT, CHECKOUT PROCEDURES, SIMULATION, TEST  
FACILITIES (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES), SPACECRAFT SYSTEMS TEST, SST(SPACECRAFT  
SYSTEMS TEST) (U)

The spacecraft systems test (SST) plan as  
outlined in the report constitutes the acceptance  
test plan for the Gemini B spacecraft utilized in  
the MQL program. The report is prepared in two  
sections: Section I outlines the overall testing  
plan on Gemini B spacecraft and Section II  
provides a brief outline of each test. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 896 22/4 22/2

MCDONNELL CO ST LOUIS MO

RCS Propellant Tank Thermostat Test.

DESCRIPTIVE NOTE: Final rept.

MAY 68 16P

REPT. NO. 058-AWC.02

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CHECKOUT EQUIPMENT),  
(\*SPACE STATIONS, CHECKOUT EQUIPMENT), (\*CHECKOUT  
EQUIPMENT, \*THERMOSTATS), PROPELLANT TANKS, REENTRY  
VEHICLES, FLUOROHYDROCARBONS, LIQUEFIED GASES,  
NITROGEN (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The propellant and oxidizer tanks of the Gemini  
B Reentry Control System incorporate  
thermostatically controlled heaters to maintain their  
temperature within prescribed limits. Tests were  
performed to develop a method to verify operation of  
the thermostats while the tanks are installed in the  
spacecraft. The tests showed that the thermostats  
can be cooled to actuation temperature in four  
minutes or less using cold nitrogen gas or a mixture  
of Freon 12 and nitrogen. (Author) (U)

AD- 856 896

UNCLASSIFIED

PAGE

78

AD- 856 895

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 895 22/2 20/4

MCDONNELL CO ST LOUIS MC

Wind Tunnel Fluctuating Pressure Tests on a  
10 Percent Scale Model of the Gemini B  
Spacecraft at Ames Unitary Plan Wind  
Tunnel. (U)

DESCRIPTIVE NOTE: Final rept..

OCT 67 51P Gregoine, J. E. ;

REPT. NO. 058-AVD.02

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Revision of report dated 1 Sep  
67.

DESCRIPTORS: (\*MANNED SPACECRAFT, BUFFETING), (\*SPACE  
STATIONS, BUFFETING), SPACE CAPSULES, PRESSURE, WIND  
TUNNEL MODELS, SCALE, REENTRY VEHICLES, ADAPTERS,  
AERODYNAMIC CHARACTERISTICS (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

A 10 percent scale model of the Gemini B  
reentry module and adapter was tested in conjunction  
with the Laboratory Vehicle. The test  
encompassed a Mach number range of 0.6 through 2.4,  
an angle-of-attack range -6 through 6 degrees and an  
angle-of-sideslip range -4 through 10 degrees. The  
purpose of the test was to obtain wideband buffeting  
pressure data needed to perform structural response  
analyses of the Gemini B adapter and laboratory  
unpressurized forward skirt. Model fluctuating  
pressure, schlieren, and tunnel pressure data were  
recorded. Overall model sound pressure levels  
(RMS) and tunnel conditions are tabulated in the  
report for each data point taken. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 894 14/3 22/2

MCDONNELL CO ST LOUIS MO

Vibration Test of a 52-85713-339 Tape Recorder. Volume II.

(U)

DESCRIPTIVE NOTE: Final rept.

AUG 68 102P

REPT. NO. 058-AVB-07-Vol-2

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-856 543.  
DESCRIPTORS: (\*MANNED SPACECRAFT, MAGNETIC RECORDING SYSTEMS). (\*SPACE STATIONS, MAGNETIC RECORDING SYSTEMS), (\*MAGNETIC RECORDING SYSTEMS, RELIABILITY(ELECTRONICS)), SPACE CAPSULES, ENVIRONMENTAL TESTS, VIBRATION, ACCEPTABILITY (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The tape recorder operated mechanically throughout all tests of Revision A of the test request. The peak-to-peak jitter was 20% or higher during all tests. The Department 289 ground station was able to obtain good sync. only for the X-axis shock mounted test. Several signal improvement techniques were attempted both at the Department 289 ground station and at the GSO ground station. There was minor improvement at the Department 289 station and partial improvement at the GSO station. The GSO station improvement was large enough to have permitted manual data reduction had this been a mission tape. Paragraphs 1 thru 4 summarize the results of the test which was run per Revision A of the test request. Retest per Revision B of the test request was completed without mechanical failure. Jitter measured on data recorded during vibration periods was improved by a minimum of 25% over jitter measured in similar periods of the test run per Revision A of the test request. Data reduction however, was only slightly improved over that of Revision A data. The retest is summarized. (Author) (U)

AD- 856 894

UNCLASSIFIED

PAGE

79

AD- 856 892

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 892 13/1 22/2 20/13

MCDONNELL CO ST LOUIS MC

Interface Heat Exchanger Heat Transfer Element Test.

(U)

DESCRIPTIVE NOTE: Final rept.

AUG 68 28P

REPT. NO. 058-ATC.03

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, HEAT EXCHANGERS), (\*SPACE STATIONS, HEAT EXCHANGERS), (\*HEAT EXCHANGERS, HEAT TRANSFER COEFFICIENTS), SPACE CAPSULES, INTERFACES, COOLANTS (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The Interface Heat Exchanger Coldplate, Part Number 58A831057, is a two-circuit coldplate for the Gemini B coolant system. The purpose of the test was to determine the heat transfer coefficient from the interface surface of the coldplate to the coolant fluid in each circuit for the nominal environmental control system operating conditions. The heat transfer coefficient (UA) for the primary circuit, at 140 lbs/hr coolant flow, was 131 Btu/hrF. For the secondary circuit at 140 lbs/hr the UA was 100 Btu/hrF. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 891 6/17 13/1 22/2

MCDONNELL CO ST LOUIS MO

Condensate Wetting of Suit Heat Exchanger  
Water Separator Plates.

(U)

DESCRIPTIVE NOTE: Final rept.

JUL 67 21P

REPT. NO. 058-ATC.02

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, HEAT EXCHANGERS),  
(\*SPACE STATIONS, HEAT EXCHANGERS), (\*HEAT EXCHANGERS,  
WETTING), (\*PRESSURE SUITS, HEAT EXCHANGERS), SPACE  
CAPSULES, SPACE SIMULATION CHAMBERS, STORAGE (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

It is anticipated that the water separator plates  
in the suit heat exchanger will become dry during the  
orbital storage phase of the Gemini 'B' mission.  
Dry water separator plates provide a path for  
leakage of cabin atmosphere through the suit heat  
exchanger condensate outlet line to the water  
evaporator and then overboard through the relief  
valve. The purpose of this test was to determine  
the feasibility of wetting the water separator plates  
in a dry suit heat exchanger with the condensate  
normally collected within the unit. This was done  
by subjecting the heat exchanger to conditions that  
simulated its operation in the spacecraft and  
concurrently measuring the water output and gas  
leakage through the water separator plates.  
(Author) (U)

AD- 856 891

UNCLASSIFIED

PAGE

80

AD- 856 890

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 890 13/1 22/2 20/4

MCDONNELL CC ST LOUIS MC

Gemini B Interface Heat Exchanger Flow  
Distribution Test.

(U)

DESCRIPTIVE NOTE: Final rept.,

JAN 67 11P Bushey, C. E. ;

REPT. NO. 058-ATC.01

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Limited number of copies containing  
color other than black and white are available until stock  
is exhausted. Reproductions will be made in black and  
white only.

DESCRIPTORS: (\*MANNED SPACECRAFT, HEAT EXCHANGERS),  
(\*SPACE STATIONS, HEAT EXCHANGERS), (\*HEAT EXCHANGERS,  
FLUID FLOW), SPACE CAPSULES, VELOCITY, DISTRIBUTION,  
CONFIGURATION, INTERFACES, COOLANTS, MODEL TESTS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

A series of flow tests were conducted to determine  
the optimum header-core and flow path configuration  
for uniform velocity distribution through two  
different heat exchanger configurations, to aid in  
the design of the Gemini B/Laboratory interface  
heat exchanger. The flow tests consisted of  
flowing colored water through a visualization model  
of different proposed interface heat exchanger loop  
configurations at a Reynolds Number equivalent to  
that of coolant fluid flowing at 140 lb/hr and 70F.  
Motion pictures were taken into a mirror setup, to  
simultaneously record the flow distribution on both  
sides of the model. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 889 22/2 20/11

MCDONNELL AIRCRAFT CO ST LOUIS MO

Ultimate Internal and External Pressure Tests of the Reentry Module Structure (Pressure Test of Static Reentry Module I). Volume I.

FEB 69 28P  
REPT. NO. MAC-058-ASB.05  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, REENTRY VEHICLES), (\*SPACE STATIONS, REENTRY VEHICLES), (\*SPACECRAFT CABINS, FAILURE(MECHANICS)), SPACE CAPSULES, PRESSURE, BUCKLING, RUPTURE, BEAMS(STRUCTURAL) (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

Results are presented for testing conducted to demonstrate the capability of the large pressure bulkhead and centerline beam of the Gemini B spacecraft to withstand ultimate burst pressure and ultimate collapse pressure. The large pressure bulkhead and centerline beam withstood the applied ultimate burst pressure and ultimate collapse pressure without any visible damage or deformation. (Author) (U)

AD- 856 889

UNCLASSIFIED

PAGE

81

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 888 1/3 22/2

MCDONNELL CC ST LOUIS MO

Static Test of Recovery Parachute Aft Bridle Fitting and Support Structure. (U)

DESCRIPTIVE NOTE: Final rept.  
MAR 69 21P  
REPT. NO. 058-ASB.03  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, PARACHUTES), (\*SPACE STATIONS, PARACHUTES), (\*PARACHUTES, LOADS(FORCES)), SPACE CAPSULES, FITTINGS, RECOVERY, ATMOSPHERE ENTRY, SUPPORTS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

Results are presented from a static test conducted to demonstrate the capability of the parachute aft bridle fitting backup structure to withstand the recovery parachute loads. The aft bridle fitting loads were of the same magnitude as those of NASA Gemini and the bridle fitting was identical to that of NASA Gemini. Modification to the fitting backup structure as a result of incorporating a hatch in the large pressure bulkhead was the reason for retesting this area. (Author) (U)

AD- 856 888

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 887

22/2

MCDONNELL CO ST LOUIS MO

Static Test of the Hoist Loop Support Fitting.

(U)

DESCRIPTIVE NOTE: Final Rept.

MAR 69 17P

REPT. NO. 058-ASB.02

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, FITTINGS), (\*SPACE STATIONS, FITTINGS), HOISTS, MECHANICAL CABLES, LOADS(FORCES) (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

Results are presented for a static test conducted to demonstrate the capability of the Gemini B hoist loop support fitting and backup structure to withstand the hoist loads. The Gemini B hoist loop support fitting has been completely redesigned in order to incorporate a hatch in the large pressure bulkhead. (Author) (U)

AD- 856 887

UNCLASSIFIED

PAGE

82

AD- 856 886

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 886

22/2

MCDONNELL CO ST LOUIS MO

Heat Shield Hatch Acceptance Test for Functional Fit at Temperature.

(U)

DESCRIPTIVE NOTE: Final rept.

MAR 69 17P

REPT. NO. 058-ARB.04.02

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, HATCHES), (\*SPACE STATIONS, HATCHES), (\*HATCHES, PERFORMANCE(ENGINEERING)), SPACE CAPSULES, HEAT SHIELDS, PARKING ORBIT TRAJECTORIES, TEMPERATURE, FASTENINGS, ACCEPTABILITY (U)

IDENTIFIERS: GAPS, GEMINI, \*GEMINI B PROJECT, LATCHES, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The heat shield hatch assembly for Gemini B is designed to provide access to the crew-transfer tunnel during the orbital phase of a mission. The hatch latching mechanism has been successfully tested previously at simulated altitude and temperature. The purpose of the testing described in this report was to demonstrate that there is an acceptable functional fit between the heat shield and the heat shield hatch at operating temperatures. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 885

22/2

MCDONNELL CO ST LOUIS MO

Heat Shield Hatch Mechanism - Simulated  
Altitude and Temperature Functional Test.

(U)

DESCRIPTIVE NOTE: Final rept.

AUG 68 107P

REPT. NO. 058-ARB.04

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, HATCHES). (\*SPACE STATIONS, HATCHES). (\*HATCHES. PERFORMANCE(ENGINEERING)). HEAT SHIELDS, SPACE ENVIRONMENTS, LOADS(FORCES). TORQUE, FASTENERS, LIFE EXPECTANCY, SIMULATION, ALTITUDE, TEMPERATURE IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, LATCHES. \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)

(U)

The heat shield-hatch assembly for Gemini B is designed to provide access to the crew transfer tunnel during the orbital phase of a mission. The purpose of the testing was to demonstrate that the heat shield hatch latching mechanism would function satisfactorily in simulated orbital temperature and pressure environments. (Author)

(U)

AD- 856 885

UNCLASSIFIED

PAGE

83

AD- 856 884

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 884

22/2

MCDONNELL CO ST LOUIS MO

Hatch Actuator Breech Combustible Material  
Evaluation.

(U)

DESCRIPTIVE NOTE: Final rept.

AUG 68 18P

REPT. NO. 058-AMD.01

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, HATCHES). (\*SPACE STATIONS, ACTUATORS). SPECIFICATIONS, SPACE CAPSULES. AUTOIGNITION, PRESSURE, SPACE ENVIRONMENTS, CHEMICAL ANALYSIS, EXPLOSIVES IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)

(U)

(U)

A series of tests was performed to confirm that the Gemini B Hatch Actuator Breech combustible compounds were representative of the NASA Gemini compounds and have properties that will preclude autoignition when exposed to the Gemini B high temperature and low pressure usage environment. Testing included high temperature-altitude soaks of Gemini B compounds and a chemical analysis of both Gemini B and NASA Gemini compounds. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 883

19/1 22/2

MCDONNELL CO ST LOUIS MO

FLSC Cutter Assembly/Dual Titanium Straps  
Gap Test.

(U)

DESCRIPTIVE NOTE: Final rept.,

JUL 67 14P Fannsworth, Craig ;

REPT. NO. 058-AMA.08

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, EXPLOSIVE ACTUATORS),  
(\*SPACE STATIONS, EXPLOSIVE ACTUATORS), (\*EXPLOSIVE  
ACTUATORS, STAGING), SPACE CAPSULES, ADAPTERS, SHAPED  
CHARGES, CUTTING, PERFORMANCE(ENGINEERING), TITANIUM (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

Six tests were conducted at ambient conditions to  
evaluate the cutting performance of the NASA Gemini  
52-72704 Flexible Linear Shaped Charge  
(FLSC) Cutter Assembly with dual titanium  
straps. One test was performed to demonstrate the  
effective severance of a dual titanium strap assembly  
with a thickness 123 percent of the nominal strap  
thickness (0.071 inch). Five tests were  
performed to evaluate depth of FLSC cutting as a  
function of gap distance between the FLSC and the  
strap. The cutter assembly was successfully  
initiated, and the strap assembly was completely  
severed during each test. FLSC cutting could not  
be distinguished from shearing of the strap due to  
hot gases and molten lead from the FLSC sheath  
washing across the severed surfaces of the strap  
assembly. The FLSC severance of straps  
demonstrated a Gemini B performance margin of  
2.70 minimum in terms of installation gap.  
(Author) (U)

AD- 856 883

UNCLASSIFIED

PAGE

84

AD- 856 882

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 882

13/11 21/8 22/2

MCDONNELL CO ST LOUIS MC

Gemini B Orbital Storage Test of Reentry  
Control System Engine Propellant  
Valves.

(U)

DESCRIPTIVE NOTE: Final rept.,

JUL 67 13P Shipp, R. W. ;

REPT. NO. 058-ALC.02

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, REENTRY VEHICLES),  
(\*SPACE STATIONS, REENTRY VEHICLES), (\*REENTRY VEHICLES,  
\*PROPELLANT CONTROL), (\*INTAKE VALVES,  
PERFORMANCE(ENGINEERING)), SPACE CAPSULES, SPACE  
ENVIRONMENTS, ROCKET ENGINES, THRUST VECTOR CONTROL  
SYSTEMS, FLUID FLOW  
IDENTIFIERS: COLD WELDING, GEMINI, \*GEMINI B PROJECT,  
\*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

These tests were conducted to determine the  
possible cold welding effects, due to extended  
storage in a simulated Gemini B high vacuum and  
temperature environment, on a set of Gemini B  
Reentry Control System Propellant Valves.  
A functional test was performed to verify that the  
valves operated within the applicable specification  
limits at the beginning and end of the test series.  
Results show no significant loss in valve  
performance due to the valve storage and valve  
cycling tests. (Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 881 21/2 22/2

MCDONNELL CO ST LOUIS MO

Subscale Rocket Impingement - Blast Shield  
and Laboratory Tunnel Specimen.

(U)

DESCRIPTIVE NOTE: Final rept.

FEB 69 49P

REPT. NO. 058-AKA.05

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

Availability: Microfiche copies only.

DESCRIPTORS: (\*MANNED SPACECRAFT, SOLID PROPELLANT  
ROCKET ENGINES); (\*SPACE STATIONS, SOLID PROPELLANT  
ROCKET ENGINES); (\*EXHAUST FLAMES, EROSION); SPACE  
CAPSULES, SPACECRAFT COMPONENTS, AIRFRAMES, MODEL TESTS,  
SHIELDING, STRAIN(MECHANICS), SEALS, HEAT EXCHANGERS,  
ELECTRICAL EQUIPMENT, RETRO ROCKETS (U)

IDENTIFIERS: \*BLAST SHIELDS, \*CREW TRANSFER TUNNELS,  
GEMINI, \*GEMINI B PROJECT, \*MODULAR CONSTRUCTION,  
\*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

A test program was initiated to evaluate the  
capability of representative samples of the Gemini  
B Laboratory Module (LM) Transfer Tunnel  
and Blast Shield to withstand the pressure,  
temperature, and erosive environment caused by the  
impingement of the exhaust plume of a subscale (500  
pound thrust) solid propellant rocket motor. The  
subscale rocket motors enabled the retrorocket local  
ballistic properties to be duplicated, but did not  
produce the total loading of a full scale retrorocket  
motor. During this test program six tests were  
performed, one using an LM transfer tunnel test  
panel and five using blast shield test panels. In  
addition, two trial tests were performed in order  
that various pertinent test parameters could be  
verified prior to the actual tests. (Author) (U)

AD- 856 881

UNCLASSIFIED

PAGE

85

AD- 856 880

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 880 22/2 14/2

MCDONNELL CO ST LOUIS MO

Vibration Qualification Test of Shock  
Mounted 52-88722-5 Low Range Pressure  
Transducer Gemini B-GBQ.

(U)

DESCRIPTIVE NOTE: Final rept.

APR 69 60P

REPT. NO. 058-AHC.01

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, PRESSURE GAGES),  
(\*SPACE STATIONS, PRESSURE GAGES), (\*PRESSURE GAGES,  
RELIABILITY), SPACE CAPSULES, DETECTORS, PRESSURE,  
ENVIRONMENTAL TESTS, VIBRATION, ACCEPTABILITY  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES), DETECTORS, PRESSURE (U)

Random vibration testing was conducted on a 52-  
88722-5 Pressure Transducer to determine the  
operating characteristics and the structural adequacy  
of the pressure transducer while mounted on  
isolators. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 879 13/11 22/2

MCDONNELL CO ST LOUIS MO

Functional Tests on Two Coolant Pump Assemblies.

(U)

DESCRIPTIVE NOTE: Final rept.,  
 OCT 67 31P  
 REPT. NO. 058-AEI.01.05  
 CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, COOLANT PUMPS),  
 (\*SPACE STATIONS, COOLANT PUMPS), (\*COOLANT PUMPS,  
 SPECIFICATIONS), SPACE CAPSULES, ELECTRICAL PROPERTIES,  
 FAILURE(ELECTRONICS), INVERTERS (U)  
 IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
 ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
 LABORATORIES) (U)

Two prototype coolant pump power inverters and two  
 coolant pump assemblies were received with  
 instructions to perform electrical tests. The  
 tests, which also were performed with a sinusoidal  
 power supply, were conducted to evaluate the  
 operation of the bread boards with the coolant pumps.  
 Two additional coolant pump cartridges were  
 received for comparison test purposes with the  
 original cartridges installed in the pump assemblies.  
 (Author) (U)

AD- 856 879

UNCLASSIFIED

PAGE

86

AD- 856 878

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 878 9/3 13/11 22/2

MCDONNELL CO ST LOUIS MC

Coolant Pump Power Inverter - Motor  
 Running Characteristics.

(U)

DESCRIPTIVE NOTE: Final rept.,  
 SEP 67 16P  
 REPT. NO. 058-AEI.01.03  
 CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, COOLANT PUMPS),  
 (\*SPACE STATIONS, COOLANT PUMPS), (\*COOLANT PUMPS,  
 \*ELECTRIC MOTORS), SPACE CAPSULES, TORQUE, ELECTRICAL  
 PROPERTIES, VELOCITY, INVERTERS (U)  
 IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
 ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
 LABORATORIES) (U)

Tests were conducted to establish the running  
 characteristics of a motor used to drive the coolant  
 pumps of the Environmental Control System in  
 the Gemini spacecraft. Torque, input power, line  
 to line voltage, and line current versus speed were  
 measured for each of the six different power supplies  
 are given. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 877 9/1 22/2

MCDONNELL CO ST LOUIS MO

Evaluation of Wire Characteristics for use on Gemini B. (U)

DESCRIPTIVE NOTE: Final rept.,  
MAY 67 49P Raminand, J. B.;  
REPT. NO. 058-AED.01

UNCLASSIFIED REPORT

Availability: Microfiche copies only.  
DESCRIPTORS: (\*MANNED SPACECRAFT, ELECTRIC CABLES),  
(\*SPACE STATIONS, ELECTRIC CABLES), (\*ELECTRIC CABLES,  
RELIABILITY(ELECTRONICS)), SPACE CAPSULES, ELECTRIC  
CURRENTS, HIGH ALTITUDE, LIQUID IMMERSION TESTS,  
ELECTRIC INSULATION, DIELECTRIC PROPERTIES, FIRE SAFETY,  
GAS ANALYSIS, ACCEPTABILITY (U)  
IDENTIFIERS: EVALUATION, GEMINI, \*GEMINI B PROJECT,  
\*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

Results are presented for a group of tests to determine the acceptability of wire bundles fabricated from Raychem 44 wire (with improved accessories), for use in Gemini B spacecraft. Three test specimens were subjected to a massive overload test (at 5.0 psia, 100 percent oxygen atmosphere); two specimens to an altitude immersion test (24 hours at 1.47 x 10 to the -5th power psia, 36 hour soak in simulated sea water); and two specimens to an insulation resistance test (500 Vdc). Each of the test specimens were also subjected to a preliminary dielectric breakdown test at 1500 Vrms. (Author) (U)

AD- 856 877

UNCLASSIFIED

PAGE

87

AD- 856 876

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 876 9/5 22/2

MCDONNELL CO ST LOUIS MO

G.B.Q. Antenna Tests. (U)

DESCRIPTIVE NOTE: Final rept.,  
OCT 67 37P McKee, E. D.;  
REPT. NO. 058-ADA.04  
CONTRACT: FO1695-67-C-0023

UNCLASSIFIED REPORT

Availability: Microfiche copies only.  
DESCRIPTORS: (\*MANNED SPACECRAFT, \*SATELLITE ANTENNAS),  
(\*SPACE STATIONS, SATELLITE ANTENNAS), SPACE CAPSULES,  
VERY HIGH FREQUENCY, ANTENNA RADIATION PATTERNS, MODEL  
TESTS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES), \*SPACECRAFT ANTENNAS, STUB ANTENNAS (U)

The purpose of the tests was to determine the radiation distribution of the nose stub antenna mounted on the Gemini Spacecraft with and without the nose fairing and ejection spring, for frequencies peculiar to the Gemini B Qualification vehicle (G.B.Q.). The tests were run at the VHF-Telemetry (259.7 MHz) and Command (X-3) frequencies. The tests were conducted at 500 feet using the ground level range technique with the reflection level reduced to 40 dB. The tests were conducted on a 1/3 scale model of the Gemini B Spacecraft with a section of the Manned Orbital Laboratory using right hand circular (RHC) polarization for VHF-Telemetry and left hand circular (LHC) polarization for the Command Frequency. The data results consists of Radiation Distribution Plots with information printed every two degrees of theta and every two degrees of phi with plus or minus 0.5 dB resolution. Polar plots for principal plane cuts and roll cuts every ten degrees of theta, with integration information for calculation of the isotropic level. Information for contour plots was taken from the RDP's. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 875 13/5 22/1 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Extravehicular Crew Transfer Test Report  
July 1968.

(U)

MAR 69 8P  
REPT. NO. G525-ADJ-1  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Addendum to report dtd 12 Sep 68,  
AD- 03 415.DESCRIPTORS: (\*MANNED SPACECRAFT, \*EXTRAVEHICULAR  
ACTIVITY). (\*SPACE STATIONS, EXTRAVEHICULAR ACTIVITY),  
DESIGN, FLIGHT CREWS, UMBILICAL CORDS(AEROSPACE), FLIGHT  
CLOTHING, ACCELERATION (U)IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*VOL(MANNED ORBITING  
LABORATORIES) (U)

On 4 December 1968, a zero 'g' test was made at Wright-Patterson AFB to evaluate procedures and equipment. The test objectives were to evaluate: Alternate D-ring designs. EV ingress through the right hatch into the left seat with a ORC in the footwell. Push-off load test to determine maximum loads and velocities attained by crewman in inflated PSA. Two alternate D-ring designs were evaluated during the test, a pivoting slide and a slide loop. (Author)

(U)

AD- 856 875

UNCLASSIFIED

PAGE

88

AD- 856 849

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 849 9/5 22/2

MCDONNELL CC ST LOUIS MO

Gemini B Antenna System Testing.

(U)

DESCRIPTIVE NOTE: Final rept.,

OCT 67 197P McKee, E. D. ;

REPT. NO. 058-ADA-03

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, \*SATELLITE ANTENNAS),  
(\*SPACE STATIONS, SATELLITE ANTENNAS), SPACE CAPSULES,  
ANTENNA RADIATION PATTERNS, VERY HIGH FREQUENCY, MODEL  
TESTS (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*VOL(MANNED ORBITING  
LABORATORIES), \*SPACECRAFT ANTENNAS, STUB ANTENNAS (U)

The purpose of these tests was to determine the radiation distribution of the nose stub antenna mounted on the Gemini B Spacecraft. Tests were performed with and without the nose fairing and ejection spring, at the VHF-Voice (296.8 MHz) and the VHF-Recovery Beacon frequencies (243.0 MHz). Test tests were conducted at a range of 500 feet using the ground level range technique with the reflection level reduced to at least 40 db down. The tests were conducted on a 1/3 scale model of the Gemini B Spacecraft at 729.0 MHz linearly polarized for the Recovery Beacon, and on a 1/3 scale model of the Gemini B Spacecraft and the (Model used in

Laboratory was only a section 21 feet long, the actual laboratory is considerably larger) Manned Orbital Laboratory at 830.4 MHz left hand circularly polarized for the VHF-Voice and Recovery Beacon frequencies for a linear signal in horizontal and vertical polarizations. The data results consists of Radiation Distribution Plots with information printed every two degrees of Theta and every two degrees of Phi with plus or minus 0.5 db resolution, polar plots for principal plane cuts and roll cuts for every ten degrees of Theta with integration information for calculation of the isotropic level, and punched tapes. Contour plots were drawn from information obtained from the RDP's. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 847 22/2

CONDUCTION-MISSOURI ST CHARLES

Gemini B Procedures Simulator Initial  
Version Precision Qualification Test  
Procedure CEI 58Y010A GPS Computer  
Program,

(U)

MAY 69 37P Banner, Howard A. ;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, \*FLIGHT SIMULATORS),  
(\*SPACE STATIONS, FLIGHT SIMULATORS), (\*COMPUTER  
PROGRAMMING, CHECKOUT PROCEDURES), SPACE CAPSULES,  
ASCENT TRAJECTORIES, ATMOSPHERE ENTRY, ORBITS, COMPUTER  
PROGRAMMING, SPECIFICATIONS, REENTRY VEHICLES (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The expected sequence of activities are: Orbital  
test (nominal mission); Nominal/off-nominal  
ascent test; and Reentry test. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 841 22/2 22/4

DOUGLAS AIRCRAFT CO INC HUNTINGTON BEACH CALIF MISSILE  
AND SPACE SYSTEMS DIV

MOL Ground Test Plan, Acceptance Test  
Plan, Volume I. Ave Components through  
Subsystems and Age CEI's Sequence Number  
B287. Data Item Number UT-101.

(U)

JUN 68 220P  
REPT. NO. DAC-57109  
CONTRACT: F03695-67-C-0029

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, SPACECRAFT  
COMPONENTS), (\*SPACE STATIONS, OPERATIONAL READINESS),  
(\*CHECKOUT PROCEDURES, OPERATIONAL READINESS), SPACE  
CAPSULES, LANDING SITES, GROUND SUPPORT EQUIPMENT,  
CONTROLLED ATMOSPHERES, CLOSED ECOLOGICAL SYSTEMS,  
ELECTRICAL EQUIPMENT, COMMUNICATION SYSTEMS,  
INSTRUMENTATION, ATTITUDE CONTROL SYSTEMS, MAINTENANCE,  
TEST METHODS, INTERFACE (U)  
IDENTIFIERS: DATA MANAGEMENT, GEMINI, \*GEMINI B  
PROJECT, MANAGEMENT INFORMATION SYSTEMS, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

This document is divided into four sections.  
Section 1 describes the scope and purpose of the  
document and defines the terms, procedures, controls,  
and acceptance test documentation to be utilized.  
Sections 2 and 3 contain the acceptance test  
narrative descriptions, and Section 4 is the MOL  
Test Summary for acceptance tests. (Author) (U)

AD- 856 847

UNCLASSIFIED

PAGE

89

AD- 856 841

UNCLASSIFIED

ZOM07

AD-A083 001

DEFENSE TECHNICAL INFORMATION CENTER ALEXANDRIA VA  
SPACE STATIONS.(U)

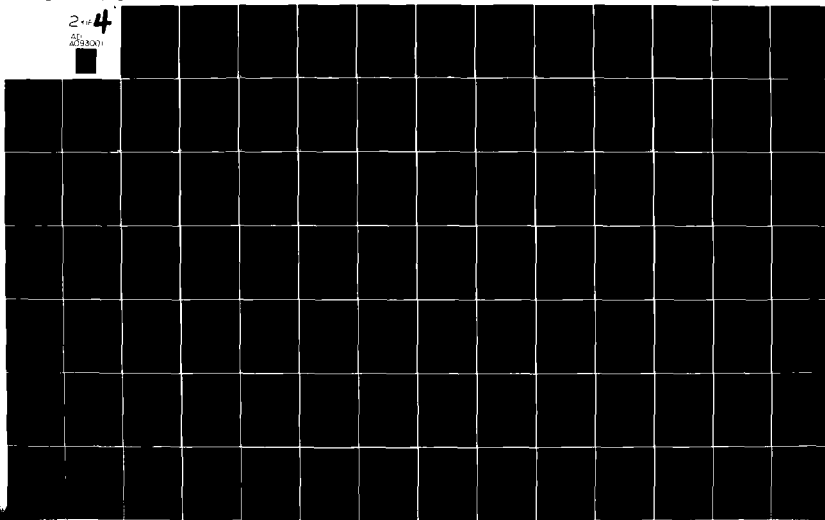
P/O 22/2

UNCLASSIFIED

APR 80  
DTIC/BIB/80-02

NL

2-114  
4  
AD  
A083001



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 831 13/1 22/2

GENERAL ELECTRIC CO PHILADELPHIA PA MISSILE AND SPACE DIV

Critical Design Review Package for Environmental Control Unit CEI No. MGL-109A.

(U)

AUG 67 269P  
REPT. NO. 67SD8106

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, AIR CONDITIONING EQUIPMENT), (\*SPACE STATIONS, AIR CONDITIONING EQUIPMENT), (\*AIR CONDITIONING EQUIPMENT, DESIGN), SPACE CAPSULES, EXHAUST SYSTEMS, DUCTS, GAS TURBINES, CAPACITORS, CONTROLLED ATMOSPHERES, FANS, FLUID FILTERS, BLOWERS, HEATERS

IDENTIFIERS: \*AIR FLOW, \*FLOW RATE, GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)

(U)

The report contains the documentation to substantiate the concepts and adequacy of the Environmental Control Unit (ECU) designs. The environmental control unit provides heating or cooling of the Mission Module, it provides air at near-constant temperature and maintains pressure within the module at 5 plus or minus 3 inches of water above ambient at all normal operating conditions. (Author)

(U)

AD- 856 831

UNCLASSIFIED

PAGE

90

AD- 856 820

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 820 22/2 22/4

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Gemini B Procedures Simulator, Performance/Design Requirements.

(U)

JUN 68 88P  
REPT. NO. MCASTRO-E734  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Revision of report dated 1 Dec 66.

DESCRIPTORS: (\*MANNED SPACECRAFT, \*SIMULATORS), (\*SPACE STATIONS, \*SIMULATORS), (\*LAUNCH VEHICLES, FLIGHT \*SIMULATORS), SPACE CAPSULES, HUMAN FACTORS ENGINEERING, MISSION PROFILES, SIMULATION, SPACECRAFT COMPONENTS, TRAINING DEVICES, INTERFACES, SPECIFICATIONS

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), TITAN 3

(U)

The Gemini B Procedures Simulator (GBPS) will be used for training and procedures development for the Gemini B segment of the Manned Orbiting Laboratory (MOL) program. Set forth in this document are the performance and design requirements for the GBPS. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 819

13/12 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Gemini B Safety Program Status Report.

(U)

FEB 69 19P

REPT. NO. H019-1

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, SAFETY), (\*SPACE STATIONS, SAFETY), SPACE CAPSULES, HAZARDS, FLIGHT CREWS, OPERATION, ABORT, LAUNCHING, REPORTS

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)

(U)

(U)

Contents: Safety analyses; Fault hazard analysis; Fault tree analysis; Launch phase safety analysis; Pre-launch/launch operational hazard analysis; Crew safety numerics; Hazard numerics; Operating safety analysis; Interface data exchange; Safety documentation; Hazard reports; Gemini B system safety plan; Safety studies; Ascent aborts; Other studies.

(U)

AD- 856 819

UNCLASSIFIED

PAGE

91

AD- 856 817

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 817

5/1

22/2

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Gemini B Flight Effectiveness Model Report,

(U)

APR 69 245P

Chochohousek, L. D. ;

REPT. NO. MCASTRO-F919

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, OPERATIONAL READINESS), (\*SPACE STATIONS, OPERATIONAL READINESS), (\*OPERATIONAL READINESS, \*MANAGEMENT PLANNING AND CONTROL), SPACE CAPSULES, ELECTRICAL EQUIPMENT, INERTIAL GUIDANCE, CONTROL SYSTEMS, VOICE COMMUNICATIONS, LIFE SUPPORT, EXPLOSIVE ACTUATORS, RETRO ROCKETS, EJECTION SEATS, DISPLAY SYSTEMS, SOLID PROPELLANT ROCKET ENGINES, COMPUTER PROGRAMS

(U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), TITAN 3

(U)

The report presents the methodology and rationale used to develop quantitative probability estimates for the Gemini B Segment in support of the MOL Flight Effectiveness Model. (Author)

(U)



## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 816 22/2 22/4

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Gemini B Mass Properties Report 3.3  
Operational Support Plan for Remote Site  
Phase.

(U)

JUN 68 9P  
REPT. NO. MCASTRO-G294  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, LOAD DISTRIBUTION),  
(\*SPACE STATIONS, LOAD DISTRIBUTION), (\*LOAD  
DISTRIBUTION, CHECKOUT PROCEDURES), SPACE CAPSULES,  
WEIGHT, CENTER OF GRAVITY, MISALIGNMENT, RETRO ROCKET(U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The report presents the procedures for determining  
and recording the mass property revisions resulting  
from spacecraft changes implemented at the remote  
site. The channels through which the data is to  
proceed for rapid evaluation and incorporation are  
outlined. The procedure which allows for the  
contingency requirement to retarget the retrograde  
rockets is presented along with the procedure for the  
single point check weighing. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 815 5/1 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN  
DIV

Gemini B Orbiting Vehicle Effectiveness  
Assessment Plan Report.

(U)

DEC 68 20P  
REPT. NO. McDonnell Douglas-G867  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, MANAGEMENT PLANNING  
AND CONTROL), (\*SPACE STATIONS, MANAGEMENT PLANNING AND  
CONTROL), SPACE CAPSULES, QUALITY CONTROL, FAILURE,  
DOCUMENTS, RELIABILITY, EFFECTIVENESS, SPACECRAFT  
COMPONENTS (U)

IDENTIFIERS: FAILURE, RATES, F-25 MANAGEMENT  
INFORMATION SYSTEMS, GEMINI, \*GEMINI B PROJECT,  
MANAGEMENT INFORMATION SYSTEMS, \*MANNED ORBITING  
LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

This report supplements Report F919, 'Gemini  
B Flight Effectiveness Model Report' and is  
used in conjunction with F919 to develop the  
numerics necessary for presentation in the DV  
Effectiveness Assessment. The procedures,  
ground rules and assumptions used in the development  
of the numerics from receipt of raw data through  
transmittal of the resultant assessment, are  
presented. Finally, the various steps of  
assessment to be followed, dependent upon the status  
of the equipment at a given time and the  
applicability of test data are defined.  
(Author) (U)

AD- 856 816

UNCLASSIFIED

PAGE

92

AD- 856 815

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 814 13/12 22/2

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Gemini B Oxygen Safety Study. Volume  
V. Cabin Egress.

(U)

MAY 67 46P

REPT. NO. MCASTRO-F-415-Vol-5  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 4, AD-856 813L and Volume 6, AD-856 862L.  
 DESCRIPTIONS: (\*MANNED SPACECRAFT, AEROSPACE SYSTEMS), (\*SPACE STATIONS, AEROSPACE SYSTEMS), (\*AEROSPACE SYSTEMS, RELIABILITY), SPACE CAPSULES, CONFIGURATION, TEST METHODS, ACTUATORS, SPACECRAFT SEATS, OXYGEN MASKS, SPACE CREWS, (U)SPACE CREWS (U)  
 IDENTIFIERS: \*EMERGENCIES, \*ESCAPE SYSTEMS, GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

Equipment/capabilities and procedures for crew egress from the Gemini B during emergency pad conditions and altitude chamber tests are discussed. (Author) (U)

AD- 856 814

UNCLASSIFIED

PAGE

93

AD- 856 813

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 813 13/12 22/2

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Gemini B Oxygen Safety Study. Volume  
IV. Equipment Review.

(U)

MAY 67 48P

REPT. NO. MCASTRO-F415-Vol-4  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3, AD-856 812L and Volume 5, AD-856 814L.  
 DESCRIPTIONS: (\*MANNED SPACECRAFT, FIRE SAFETY), (\*SPACE STATIONS, FIRE SAFETY), (\*SPACE CAPSULES, \*MATERIALS), CONTROLLED ATMOSPHERES, FLAMMABILITY, SPACECRAFT COMPONENTS, ELECTRICAL EQUIPMENT, PRESSURE SUITS, VALVES, VOICE COMMUNICATIONS, COOLANTS, TEST METHODS, IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The equipment in the baseline Gemini B pressurized cabin is identified and classified in regard to possible fire hazard. This information is tabulated along with details of equipment testing in oxygen. The electrical items that are not hermetically sealed have been tested in oxygen atmosphere. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 812 13/12 22/2

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Gemini B Oxygen Safety Study. Volume  
III. Materials Summary.

(U)

MAY 67 107P

REPT. NO. MCASTRO-F415-Vol-3  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-856 811L  
and Volume 4, AD-856 813L.

DESCRIPTORS: (\*MANNED SPACECRAFT, FIRE SAFETY), (\*SPACE STATIONS, FIRE SAFETY), (\*SPACE CAPSULES, \*MATERIALS), CONTROLLED ATMOSPHERES, FLAMMABILITY, HAZARDS, PARACHUTES, ELECTRIC CONNECTORS, LIFE RAFTS, SPACECRAFT COMPONENTS, PRESSURE SUITS, GLASS TEXTILES, HALOCARBON PLASTICS, ALUMINUM, LAMINATES, TEST METHODS (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The metallic and non-metallic materials used in the present baseline Gemini B pressurized cabin and tunnel areas are identified. A preliminary evaluation has been performed to determine the extent of hazard that exists due to the presence of flammable materials and what action might be taken to reduce this hazard. (Author) (U)

AD- 856 812

UNCLASSIFIED

PAGE

94

AD- 856 811

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 811 13/12 22/2

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Gemini B Oxygen Safety Study. Volume  
II. NASA Gemini Environmental Control  
System Data.

(U)

MAY 67 23P

REPT. NO. MCASTRO-F415-Vol-2  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-856 739 and  
Volume 3, AD-856 812.

DESCRIPTORS: (\*MANNED SPACECRAFT, FIRE SAFETY), (\*SPACE STATIONS, FIRE SAFETY), (\*SPACE CAPSULES, \*MATERIALS), CONTROLLED ATMOSPHERES, ENVIRONMENTAL TESTS, COOLANT PUMPS, PRESSURE SUITS, SPACECRAFT COMPONENTS, CHECKOUT PROCEDURES (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the present volume of the Gemini B oxygen safety study report is to present the results of a review of the testing performed on the Environmental Control System (ECS) during the NASA Gemini program. The NASA Gemini test program included testing at the material, component, and system levels. Much of the emphasis was placed on complete system testing. (Author) (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 810 9/6 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for Telemetry Control and Checkout Console 52E440063.

MAY 69 33P  
REPT. NO. B5-10-117  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, TELEMETER SYSTEMS), (\*SPACE STATIONS, TELEMETER SYSTEMS), (\*TELEMETER SYSTEMS, \*CONTROL PANELS), SPACE CAPSULES, CHECKOUT EQUIPMENT, INSTRUCTION MANUALS, MAINTENANCE, GROUND SUPPORT EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the Space Technical Data Report (STR) is to familiarize personnel with the operation and service instructions for the Telemetry Control and Checkout Console, 52E440063-11. The STR presents a description of the console, its panels and their controls and functions, and servicing instructions for preventive maintenance. (Author) (U)

AD- 856 810

UNCLASSIFIED

PAGE

95

AD- 856 809

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 809 9/6 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for Split Phase Converter 52E440049.

OCT 68 29P  
REPT. NO. B5-10-116  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, TELEMETER SYSTEMS), (\*SPACE STATIONS, TELEMETER SYSTEMS), (\*TELEMETER SYSTEMS, \*PHASE CONTROL DEVICES), TELEMETERING DATA, GROUND SUPPORT EQUIPMENT, PROCESSING, INSTRUCTION MANUALS, MAINTENANCE (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), SIGNAL PROCESSING SYSTEMS (U)

The purpose of the Space Technical Data Report (STR) is to familiarize personnel with the operation and service of the Split Phase Converter, 52E440049-3. The STR describes the usage, circuit and control functions, and preventive maintenance procedures for the 52E440049-3 configuration. The Split Phase Converter is used to convert the Gemini B Instrumentation System telemetry signal data to a form and amplitude more suitable for hardline transmission to ground monitoring equipment. (Author) (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 808 10/2 9/6 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for T/M Remote Displays Power Supply Assembly  
52E440052.

NOV 68 47P

REPT. NO. 85-10-115

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

(U)

DESCRIPTORS: (\*MANNED SPACECRAFT, TELEMETRY SYSTEMS), (\*SPACE STATIONS, TELEMETRY SYSTEMS), (\*TELEMETRY SYSTEMS, \*POWER SUPPLIES), SPACE CAPSULES, GROUND SUPPORT EQUIPMENT, DISPLAY SYSTEMS, DIRECT CURRENT, INSTRUCTION MANUALS, MAINTENANCE  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)  
(U)

The purpose of the Space Technical Data Report (STDR) is to familiarize personnel with the operation and service instructions for the T/M Remote Displays Power Supply Assembly, 52E440052. The power supply assembly supplies regulated dc voltages for operation of all telemetry remote display units. This STDR presents a description of the power supply assembly, its panels and their controls and functions, and servicing instructions for preventive maintenance. The basic document is prepared for the 52E440052-55 configuration. Addendum A of this STDR describes the 52E440052-57 configuration by comparison to the basic unit. (Author)  
(U)

AD- 856 808

UNCLASSIFIED

PAGE

96

AD- 856 807

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 807 22/2

MCDONNELL DCUGLAS CORP ST LOUIS MO

Operation and Service Manual for Re-Entry Module Instrumentation Simulator  
52E440041.

AUG 68 79P

REPT. NO. 85-10-112

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

(U)

DESCRIPTORS: (\*MANNED SPACECRAFT, REENTRY VEHICLES), (\*SPACE STATIONS, REENTRY VEHICLES), (\*REENTRY VEHICLES, MODELS(SIMULATIONS)), SPACE CAPSULES, INSTRUMENTATION, INSTRUCTION MANUALS, CALIBRATION, MAINTENANCE, CONTROL PANELS, MULTIPLEXING, PULSE CODE MODULATION  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), \*REENTRY MODULES  
(U)

The Re-entry Module Instrumentation Simulator is an operating duplicate of the Instrumentation System in the Gemini B Spacecraft re-entry module, and is used for ground-testing adjoining spacecraft modules while physically separated from the re-entry module. The purpose of the Space Technical Data report is to familiarize personnel with the operation and service of the Re-entry Module Instrumentation Simulator. The various sections explain preparation for use, special tools required, operation, preventive maintenance and calibration.  
(Author)  
(U)

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 806

22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Spacecraft  
Instrumentation System Test Set 52E440040,

(U)

APR 67 342P McElvain, M. ;  
REPT. NO. B5-10-111  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CHECKOUT EQUIPMENT),  
(\*SPACE STATIONS, CHECKOUT EQUIPMENT), (\*CHECKOUT  
EQUIPMENT, CONTROL PANELS), ELECTRONIC EQUIPMENT, SIGNAL  
GENERATORS, GROUND SUPPORT EQUIPMENT, WIRING DIAGRAMS,  
INSTRUCTION MANUALS, PERSONNEL, MAINTENANCE (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The report discusses the operation and service of  
the spacecraft instrumentation system test set,  
52E440040-53. A description of the test set  
equipment, functions of its components, and  
preventive maintenance instructions is presented.  
(Author) (U)

AD- 856 806

UNCLASSIFIED

PAGE

97

AD- 856 805

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 805 13/7 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN  
DIVOperation and Service Manual for High  
Pressure GN2/He Pressurization Panel  
58E421218.

(U)

MAY 69 32P  
REPT. NO. B5-10-100  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, GROUND SUPPORT  
EQUIPMENT), (\*SPACE STATIONS, GROUND SUPPORT EQUIPMENT),  
(\*PNEUMATIC DEVICES, CONTROL PANELS), NITROGEN, HELIUM,  
INSTRUCTION MANUALS, PRESSURE GAGES, PRESSURE  
REGULATORS, CUT OFF VALVES, HIGH PRESSURE VALVES, LEAK  
DETECTORS, CHECKOUT EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the Space Technical Data  
Report (SDR) is to familiarize personnel with  
the operation and service of the High Pressure  
GN2/He Pressurization Panel, 58E421218.  
The SDR presents a description of the  
pressurization panel, its controls and functions, and  
servicing instructions for preventive maintenance.  
(Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 804 22/4 14/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for Helium Leak Detector Cabinet 52E420097. (U)

JAN 69 37P

REPT. NO. B5-10-99

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, GROUND SUPPORT EQUIPMENT), (\*SPACE STATIONS, GROUND SUPPORT EQUIPMENT), (\*GROUND SUPPORT EQUIPMENT, \*LEAK DETECTORS), HELIUM, HYDROGEN, INSTRUCTION MANUALS (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the Space Technical Data Report (STDR) is to familiarize personnel with the operation and service instructions for the Helium Leak Detector Cabinet, 52E420097-1 and 52E420097-101. The two configurations are functionally the same with the 52E420097-101 assembly incorporating a modified leak detector with ultra high sensing capabilities for hydrogen leak detection. The information contained in this document pertains to both detectors; however, only the Helium Leak Detector will be mentioned. Addendum A contains information pertaining to the Hydrogen Leak Detector, which differs from that of the Helium Leak Detector. The STDR presents a description of the detector, its control and indicator functions, and service instructions for preventive maintenance. (Author) (U)

AD- 856 804

UNCLASSIFIED

PAGE

98

AD- 856 803

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 803 13/7 22/2

MCDONNELL DCUGLAS CORP ST LOUIS MO

Operation and Service Manual for Nitrogen and Helium Pressurization Units 52E420013, 52E420014. (U)

MAR 68 39P Reynolds,H. ;

REPT. NO. B5-10-96

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, PNEUMATIC DEVICES), (\*SPACE STATIONS, PNEUMATIC DEVICES), (\*PNEUMATIC DEVICES, INSTRUMENTATION), SPACE CAPSULES, CONTROL PANELS, INDICATOR LIGHTS, INSTRUCTION MANUALS, MAINTENANCE, GROUND SUPPORT EQUIPMENT (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the Space Technical Data report (STDR) is to familiarize personnel with the operation and service instructions for the Nitrogen Pressurization Unit and the Helium Pressurization Unit. The STDR presents a description of the units, their controls and functions, and service instructions for preventive maintenance. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 802 22/4

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Spacecraft  
Sequence Recorder 52E230003, (U)JAN 67 31P Davis, Larry ;  
REPT. NO. 85-10-44  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, GROUND SUPPORT  
EQUIPMENT), (\*SPACE STATIONS, GROUND SUPPORT EQUIPMENT),  
(\*GROUND SUPPORT EQUIPMENT, MONITORS), SPACE CAPSULES,  
INSTRUMENTATION, CALIBRATION, MAINTENANCE, INSTRUCTION  
MANUALS, CONTROL PANELS, INDICATOR LIGHTS, CHECKOUT  
PROCEDURES, FLIGHT TESTING (U)

IDENTIFIERS: GEMINI, \*GEMINI 8 PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The Spacecraft Sequence Recorder is intended  
for use during Spacecraft System Test and  
prelaunch checkout. The unit selectively monitors  
events that occur during testing of the Ascent and  
Abort, Orbit and Separation, Retrograde and  
Landing - Post Landing Systems and produces a  
permanent recording of these events. The purpose  
of the Space Technical Data report is to  
familiarize personnel with the operation and service  
of the Spacecraft Sequence Recorder. The  
data report describes the console, its panels and its  
function when used in conjunction with related  
Aerospace Ground Equipment. (Author) (U)

AD- 856 802

UNCLASSIFIED

PAGE

99

AD- 856 801

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 801 22/4

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for C and S  
Beacon EFC Test Bench 52E190003, (U)MAR 68 89P Reynolds, H. ;  
REPT. NO. 85-10-36  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, \*CHECKOUT EQUIPMENT),  
(\*SPACE STATIONS, CHECKOUT EQUIPMENT), (\*TEST SETS,  
RADAR BEACONS), SPACE CAPSULES, RADAR EQUIPMENT, GROUND  
SUPPORT EQUIPMENT, INSTRUCTION MANUALS, MAINTENANCE, C  
BAND (U)

IDENTIFIERS: GEMINI, \*GEMINI 8 PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the report is to familiarize  
personnel with the operation and service of the C  
and S Beacon Equipment Functional Check  
(EFC) Test Bench, 52E190003. The report  
describes the test bench, its panels, and functions  
as related to EFC of the C Band Radar  
Beacons of the Gemini 8 Spacecraft. The S  
Band portion of the test bench is not applicable to  
the Gemini 8 Spacecraft and is not described.  
(Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 797 14/2 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for Rocket Pressure Test Kit 52E400002.

(U)

FEB 69 26P

REPT. NO. 85-10-86

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, RETRO ROCKETS), (\*SPACE STATIONS, RETRO ROCKETS), (\*RETRO ROCKETS, TEST EQUIPMENT), SPACE CAPSULES, PRESSURIZATION, SEALS, SOLID ROCKET PROPELLANTS, CHECKOUT PROCEDURES, INSTRUCTION MANUALS, MAINTENANCE (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The Rocket Pressure Test Kit is used to pressure test the Gemini B Spacecraft retrograde rockets prior to, or after installation into the spacecraft and periodically during storage. The pressure test is performed to verify the integrity of the rocket seals assuring that no degradation (aging) of the solid propellant has occurred. The purpose of the Space Technical Data report (STDR) is to familiarize personnel with the operation and service instructions for the test kit. The STDR presents a description of the test kit, the function of its controls and indicators and service instructions for preventive maintenance. (Author) (U)

AD- 856 797

UNCLASSIFIED

PAGE

100

AD- 856 796

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 796 14/2 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for Air Data System Tester 52E360013.

(U)

JAN 69 38P

REPT. NO. 85-10-83

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CHECKOUT EQUIPMENT), (\*SPACE STATIONS, CHECKOUT EQUIPMENT), (\*CHECKOUT EQUIPMENT, INSTRUCTION MANUALS), SPACE CAPSULES, INSTRUMENTATION, GROUND SUPPORT EQUIPMENT, MAINTENANCE, CONTROL PANELS (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the Space Technical Data report (STDR) is to familiarize personnel with the operation and service instructions for the IR Data System Tester. The tester is used during spacecraft system testing, or for bench tests to check out the spacecraft Air Data System, or system components. The STDR presents a description of the tester, the function of the Control Panel components, and servicing instructions for preventive maintenance. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 795 22/2 22/4

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Hand  
Controller Tester Kit 52E270049, (U)

OCT 67 39P Long, Donald W. ;  
REPT. NO. 85-10-70  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ATTITUDE CONTROL  
SYSTEMS). (\*SPACE STATIONS, ATTITUDE CONTROL SYSTEMS),  
(\*ATTITUDE CONTROL SYSTEMS, CHECKOUT EQUIPMENT), SPACE  
CAPSULES, GROUND SUPPORT EQUIPMENT, INSTRUCTION MANUALS,  
LOGIC CIRCUITS, WIRING DIAGRAMS, MAINTENANCE, (U)  
CALIBRATION GEMINI, \*GEMINI B PROJECT, \*MANNED  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of this report is to familiarize  
personnel with the operation and service instructions  
for the Hand Controller Tester Kit,  
52E270049. This report describes the Hand  
Controller Tester, its panel, and functions as  
related to pre-installation and post-installation  
checkout of the spacecraft hand controller.  
(Author) (U)

AD- 856 795

UNCLASSIFIED

PAGE 101

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 794 22/4 17/7 9/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Computer  
EFC Test Console 52E270023, Volume III,  
Part II, Section IV, List of  
Subassemblies and Diagrams. (U)

APR 68 362P  
REPT. NO. 85-10-64-Vol-3-Pt-2-Sect-4  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3, Part 1, AD-  
856 793.  
DESCRIPTORS: (\*MANNED SPACECRAFT, INERTIAL NAVIGATION),  
(\*SPACE STATIONS, INERTIAL NAVIGATION), (\*INERTIAL  
NAVIGATION, TEST EQUIPMENT), INSTRUCTION MANUALS,  
INSTRUMENTATION, NAVIGATION COMPUTERS, DIAGRAMS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

This volume contains a list of subassemblies and  
diagrams for the EFC 52E270023-143. (U)

AD- 856 794

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 793 22/4 17/7 9/2

MCDONNELL DOUGLAS CORP ST LOUIS MO .

Operation and Service Manual for Computer  
EFC Test Console 52E270023, Volume III,  
Part I.

APR 68 446P  
REPT. NO. 85-10-64-Vol-3-Pt-1  
CONTRACT: F04695-67-C-0023

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3, Part 2,  
Section 4, AD-856 794.

DESCRIPTORS: (\*MANNED SPACECRAFT, INERTIAL NAVIGATION),  
(\*SPACE STATIONS, INERTIAL NAVIGATION), (\*INERTIAL  
NAVIGATION, TEST EQUIPMENT), INSTRUCTION MANUALS,  
INSTRUMENTATION, NAVIGATION COMPUTERS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of this volume is to familiarize  
personnel with the operation and service instructions  
for the Inertial Guidance System (IGS) Bench  
Test Equipment (BTE), 52E270023-143 and the  
Computer BTE Dolly. (Author) (U)

AD- 856 793

UNCLASSIFIED

PAGE

102

AD- 856 792

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 792 17/7 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Inertial  
Platform Test Console 52E270020.

SEP 67 171P Long,Donald W. ;  
REPT. NO. 85-10-63  
CONTRACT: F04695-67-C-0023

(U)

UNCLASSIFIED REPORT

Availability: Microfilm copies only  
DESCRIPTORS: (\*MANNED SPACECRAFT, STABILIZED PLATFORMS),  
(\*SPACE STATIONS, STABILIZED PLATFORMS), (\*STABILIZED  
PLATFORMS, CHECKOUT PROCEDURES), SPACE CAPSULES,  
INSTRUMENTATION, INSTRUCTION MANUALS, CALIBRATION,  
MAINTENANCE, CONTROL PANELS, INDICATOR LIGHTS, INERTIAL  
GUIDANCE (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The Inertial Platform Test Console, in  
conjunction with auxiliary equipment, is used for  
EFC testing and troubleshooting the Gemini B  
Inertial Platform. The purpose of the Space  
Technical Data report is to familiarize personnel  
with the operation and service of the Inertial  
Platform test console. It provides a functional  
description of the console, its switches, controls  
and indicators. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 791 14/2 9/2 17/7 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for Computer System Test Console 52E270003. Volume I.

(U)

JAN 69 547P  
 REPT. NO. 85-10-58-Vol-1  
 CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, INERTIAL GUIDANCE), (\*SPACE STATIONS, INERTIAL GUIDANCE), (\*INERTIAL GUIDANCE, COMPUTERS), (\*COMPUTERS, \*TEST EQUIPMENT), SPACE CAPSULES, DIGITAL COMPUTERS, CHECKOUT EQUIPMENT, GROUND SUPPORT EQUIPMENT, INPUT OUTPUT DEVICES, TEST SETS, OPERATION, MAINTENANCE, INSTRUCTION MANUALS (U)  
 IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORY, \*MOL(MANNED ORBITING LABORATORY) (U)

The purpose of the volume is to familiarize personnel with the operation and service instructions for the Computer System Test Console, 52E270003-603. This tester, commonly called the Test Console Computer System, is a unit of the Aerospace Ground Equipment used to control the Digital Computer portion of the Inertial Guidance System in the Gemini Spacecraft during system and pre-launch testing. The TCCS is manufactured by the International Business Machines (IBM) Corporation of Rockville, Maryland for the McDonnell Company of St. Louis, Missouri. The report presents a description of the TCCS, its controls and functions, and servicing instructions for validation and preventive maintenance. (Author) (U)

AD- 856 791

UNCLASSIFIED

PAGE

103

AD- 856 790

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 790 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for Attitude Control System Electronics EFC Console 52E270002.

(U)

OCT 68 112P  
 REPT. NO. 8-5-10-57  
 CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CHECKOUT EQUIPMENT), (\*SPACE STATIONS, CHECKOUT EQUIPMENT), (\*ATTITUDE CONTROL SYSTEMS, INSTRUCTION MANUALS), SPACE CAPSULES, GROUND SUPPORT EQUIPMENT, CARTRIDGES(PAD), ABORT, MAINTENANCE (U)  
 IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the Space Technical Data Report (STDR) is to familiarize personnel with the operation and service of the Attitude Control System Electronics (ACSE) Equipment Functional Check (EFC) Console, 52E270002. The STDR describes the console, associated panels and their functions. The console is used in conjunction with related Aerospace Ground Equipment to perform EFC procedures on the Attitude Control Electronics Group and Pad Abort Thruster Electronics. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 789

22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Spacecraft  
Battery Load Bank 52E230073.

(U)

NOV 67 18P Ziemann.H. ;

REPT. NO. B5-10-53

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CHECKOUT EQUIPMENT),  
(\*SPACE STATIONS, CHECKOUT EQUIPMENT), (\*CHECKOUT  
EQUIPMENT, INSTRUCTION MANUALS), SPACE CAPSULES,  
MAINTENANCE, GROUND SUPPORT EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES), SPACECRAFT BATTERIES (U)

The purpose of this Space Technical Data  
Report (STDR) is to familiarize personnel with  
the operation and service of the Spacecraft  
Battery Load Bank, 52E230073. The STDR  
provides a functional description of the load bank,  
functions of switches, controls and indicators and  
operation as related to checkout of the spacecraft  
batteries. (Author) (U)

AD- 856 789

UNCLASSIFIED

PAGE

104

AD- 856 788

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 788 10/3 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN  
DIV

Operation and Service Manual for Blockhouse  
Power Backup Battery Rack 52E230049 and  
External Power Control and Monitor Backup  
Battery Rack 52E230058.

(U)

JAN 69 74P

REPT. NO. B5-10-50

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, GROUND SUPPORT  
EQUIPMENT), (\*SPACE STATIONS, GROUND SUPPORT EQUIPMENT),  
(\*GROUND SUPPORT EQUIPMENT, POWER SUPPLIES), STORAGE  
BATTERIES, ALKALINE BATTERIES, CONTROL PANELS,  
INSTRUCTION MANUALS (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES), NICKEL CADMIUM BATTERIES (U)

The purpose of the Space Technical Data  
Report (STDR) is to familiarize personnel with  
the operation and service instructions for the  
Blockhouse Power Backup Battery Rack  
(52E230049) and the External Power  
Control and Monitor Backup Battery Rack  
(52E230058). The battery racks supply backup  
power for the Launch Control Center and  
spacecraft power supply systems. The STDR  
presents a description of the battery racks, their  
associated panels and their functions, and service  
instructions for preventive maintenance.  
(Author) (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 787

22/4

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Sequence Control and Monitor Console 52E230012 and Electronic Timer Control Panel 52E270048, (U)

OCT 67 32P McElvain, M. ;  
REPT. NO. 85-10-48  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CHECKOUT EQUIPMENT), (\*SPACE STATIONS, CHECKOUT EQUIPMENT), (\*CHECKOUT EQUIPMENT, TIMING DEVICES), SPACE CAPSULES, MONITORS, INSTRUCTION MANUALS, MAINTENANCE, SEQUENCES(MATHEMATICS), CONTROL SYSTEMS, GROUND SUPPORT EQUIPMENT (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the report is to familiarize personnel with the operation and service of the Sequence Control and Monitor Console (52E230012-21) and the Electronic Timer Control Panel (52E270048-13). The STDR presents a description of the console and panel controls and functions. The console is used in conjunction with related Aerospace Ground Equipment (AGE) for checkout of the Gemini B Spacecraft Sequential System. The panel is used to control and monitor the spacecraft Time Reference System (TRS) electronic timer during spacecraft systems tests. (Author) (U)

AD- 856 787

UNCLASSIFIED

PAGE

105

AD- 856 786

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 786

10/2

22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for External Power System Control and Monitor 52E230005 Spacecraft and Module Test Power Supply 52E230038 Blockhouse DC Power Supply 52E230008. (U)

OCT 67 87P  
REPT. NO. 85-10-46  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, GROUND SUPPORT EQUIPMENT), (\*SPACE STATIONS, GROUND SUPPORT EQUIPMENT), (\*POWER SUPPLIES, GROUND SUPPORT EQUIPMENT), SPACE CAPSULES, DIRECT CURRENT, CONTROL PANELS, MONITORS, INSTRUCTION MANUALS, MAINTENANCE (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The purpose of the Space Technical Data Report (STDR) is to familiarize personnel with the operation and service of the External Power System Control and Monitor, 52E230005; Spacecraft and Module Test Power Supply, 52E230038; and Blockhouse DC Power Supply, 52E230008. The STDR describes the console, cabinets, associated panels and their functions. The console and cabinets are used in conjunction with related Aerospace Ground Equipment (AGE) to supply, control and monitor dc power to the spacecraft and associated AGE. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 785 22/4 9/5

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for C-Band  
Antenna Probe Assembly 52E190012,DEC 67 35P Ziemann, H. ;  
REPT. NO. 85-10-38  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CHECKOUT EQUIPMENT),  
(\*SPACE STATIONS, CHECKOUT EQUIPMENT), (\*SATELLITE  
ANTENNAS, \*PROBES(ELECTROMAGNETIC)), SPACE CAPSULES,  
GROUND SUPPORT EQUIPMENT, C BAND, INSTRUCTION MANUALS,  
MAINTENANCE (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES (U)

The purpose of the report is to familiarize  
personnel with the operation and service of the C-  
Band Antenna Probe Assembly, 52E190012.  
The report provides a functional description of the  
probe assembly, functions of switches, controls and  
indicators and operation as related to assembled  
spacecraft systems testing. (Author) (U)

AD- 856 785

UNCLASSIFIED

PAGE 106

AD- 856 784

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 784 22/4 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN  
DIVOperation and Service Manual for Dual Gas  
Flow Control Panel 58E181228. (U)FEB 69 32P  
REPT. NO. 85-10-31  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, LIFE SUPPORT), (\*SPACE  
STATIONS, LIFE SUPPORT), (\*GROUND SUPPORT EQUIPMENT,  
INSTRUCTION MANUALS), SPACECRAFT CABINS, MEASURING  
INSTRUMENTS, HIGH PRESSURE VALVES, OXYGEN, HELIUM,  
PRESSURIZATION, OPERATION, PERSONNEL, SPACE CAPSULES,  
MAINTENANCE, PNEUMATIC DEVICES, GAS FILTERS, PRESSURE  
REGULATORS, CONTROL PANELS, CHECKOUT EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The report discusses the operation and service of  
the dual gas flow control panel, 58E181228. The  
report presents a description of the dual gas flow  
control panel, its controls and functions, and  
servicing instructions for preventive maintenance.  
(Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 856 783 13/1 16/1 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Spacecraft  
Ground Cooling Auxiliary Refrigeration Unit  
52E180172.

DEC 67 65P Reynolds, H. N. ;  
REPT. NO. 85-10-29  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, COOLING + VENTILATING  
EQUIPMENT), (\*SPACE STATIONS, COOLING + VENTILATING  
EQUIPMENT), (\*GROUND SUPPORT EQUIPMENT, INSTRUCTION  
MANUALS), SPACE CAPSULES, HEAT SINKS, REFRIGERATION  
SYSTEMS, COOLANTS, FLUOROHYDROCARBONS, PERSONNEL,  
OPERATION, MAINTENANCE (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The report discusses the operation and service  
instructions for the spacecraft ground cooling  
auxiliary refrigeration unit, 52E180172. The  
report presents a description of the unit, its  
controls and their functions, and servicing  
instructions for preventive maintenance.  
(Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 856 782 22/4 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN  
DIV

Operation and Service Manual for ECS Coolant  
System Leak Rate Tester 52E180150.

FEB 69 28P  
REPT. NO. 85-10-27  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED  
ATMOSPHERES), (\*SPACE STATIONS, CONTROLLED ATMOSPHERES),  
(\*AIR CONDITIONING EQUIPMENT, LEAK DETECTORS), SPACE  
CAPSULES, GROUND SUPPORT EQUIPMENT, PNEUMATIC DEVICES,  
PRESSURIZATION, INSTRUCTION MANUALS, FIRE SAFETY,  
MAINTENANCE, CALIBRATION (U)

IDENTIFIERS: ECS(ENVIRONMENTAL CONTROL SYSTEM),  
ENVIRONMENTAL CONTROL SYSTEM, GEMINI, \*GEMINI B  
PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED  
ORBITING LABORATORIES) (U)

The purpose of this report is to familiarize  
personnel with the operation and service instructions  
for the ECS Coolant System Leak Rate  
Tester, 52E180150-153. The leak rate tester  
provides the capability to leak check the coolant  
system pump module prior to installation into the  
Gemini B Spacecraft and the entire spacecraft  
coolant system after installation into the  
spacecraft. This report presents a description of  
the leak rate tester, its control panel and  
associated equipment, and service instructions for  
preventive maintenance. (Author) (U)

AD- 856 783

UNCLASSIFIED

PAGE

107

AD- 856 782

UNCLASSIFIED

ZOM07



## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 781 22/4

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for Spacecraft  
ECS Test Console 52E180076.

(U)

OCT 68 54P  
REPT. NO. 85-10-24  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CHECKOUT EQUIPMENT),  
(\*SPACE STATIONS, CHECKOUT EQUIPMENT), (\*CLOSED  
ECOLOGICAL SYSTEMS, INSTRUCTION MANUALS), SPACE  
CAPSULES, GROUND SUPPORT EQUIPMENT, CONTROL SYSTEMS,  
MAINTENANCE (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of the Space Technical Data  
Report (STDR) is to familiarize personnel with  
the operation and service instructions for the  
Spacecraft Environmental Control System  
(ECS) Test Console, 52E180076. The test  
console provides the capability to functionally test  
and monitor the Gemini B Spacecraft  
Environmental Control System after installation  
into the spacecraft. The STDR presents a  
description of the test console, its panels and their  
controls, and service instructions for preventive  
maintenance. The basic portion of this document  
describes the 52E180076-1 configuration.  
Addendum A to this document describes the  
52E180076-5 configuration by comparison to the  
basic document. (Author)

(U)

AD- 856 781

UNCLASSIFIED

PAGE

108

AD- 856 780

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 780 22/4 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for GOX High  
Pressure Regulator Panel 52E180030.

(U)

MAR 69 24P  
REPT. NO. 85-10-23  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED  
ATMOSPHERES), (\*SPACE STATIONS, CONTROLLED ATMOSPHERES),  
(\*OXYGEN EQUIPMENT, \*PRESSURE REGULATORS), SPACE  
CAPSULES, GROUND SUPPORT EQUIPMENT, INSTRUCTION MANUALS,  
LEAK DETECTORS, EXPLOSIVE GASES, OXYGEN, FIRE SAFETY,  
MAINTENANCE, CALIBRATION (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of this report is to familiarize  
personnel with the operation and service instructions  
for the GOX High Pressure Regulator Panel,  
52E180030-125. The regulator panel provides the  
capability of servicing the spacecraft oxygen systems  
and controlling delivery pressure to the Spacecraft  
Leakage Tester (52E180027) during prelaunch  
activities. This report presents a description of  
the regulator panel, its controls and service  
instructions for preventive maintenance.  
(Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 779 22/4 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for LOX and LN2 Installation Kits 52E180178. (U)

MAR 69 64P

REPT. NO. 85-10-22

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED ATMOSPHERES). (\*SPACE STATIONS, CONTROLLED ATMOSPHERES). (\*TRAILERS, LIQUEFIED GASES), SPACE CAPSULES, GROUND SUPPORT EQUIPMENT, NITROGEN, OXYGEN, STORAGE TANKS, HANDLING, LOGISTICS, INSTRUCTION MANUALS, FIRE SAFETY, MAINTENANCE, CALIBRATION (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORY, \*MOL(MANNED ORBITING LABORATORY) (U)

The purpose of this report is to familiarize personnel with the operation and service instructions for the LOX and LN2 Installation Kits, 52E180178. Four service trailers, each comprised of one Converter (52E180028) and one Service Unit (52E180016), make-up the installation kits. This report presents a description of the trailers, Converter, Service Units, their control and indicator functions, and service instructions for preventive maintenance. (Author) (U)

AD- 856 779

UNCLASSIFIED

PAGE

109

AD- 856 778

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 778 22/4 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Spacecraft Leakage Tester 52E180027. (U)

SEP 68 51P

REPT. NO. 85-10-21

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, LIFE SUPPORT), (\*SPACE STATIONS, LIFE SUPPORT), (\*GROUND SUPPORT EQUIPMENT, INSTRUCTION MANUALS), SPACE CAPSULES, SPACECRAFT CABINS, PRESSURE SUITS, OXYGEN, NITROGEN, GAS FLOW, CHECKOUT EQUIPMENT, LEAK DETECTORS, PRESSURIZATION, OPERATION, PERSONNEL, MAINTENANCE (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The report discusses the operation and service instructions for the spacecraft leakage tester. The tester is used to leakage test the Gemini B Spacecraft cabin section and suit loop. The report presents a description of the tester, its control and indicator functions, and service instructions for preventive maintenance. (Author) (U)

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 777 16/1 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Spacecraft  
Command System Checkout and Monitor  
58E190513.

NOV 67 28P Long, Donald W. ;  
REPT. NO. 85-10-19  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CHECKOUT EQUIPMENT),  
(\*SPACE STATIONS, CHECKOUT EQUIPMENT), (\*CHECKOUT  
EQUIPMENT, CONTROL PANELS), ELECTRONIC EQUIPMENT,  
FREQUENCY MODULATION, MODELS(SIMULATIONS), ELECTRIC  
CONNECTORS, SIGNAL GENERATORS, GROUND SUPPORT  
EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The report discusses the operation and service  
instructions for the spacecraft command system  
checkout and monitor, 58E190513. The report  
describes the checkout and monitor console, its  
panels, and functions as related to closed loop  
checkout of the spacecraft FM tone modulated  
command system during prelaunch testing.  
(Author) (U)

AD- 856 777

UNCLASSIFIED

PAGE

110

AD- 856 776

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 776 22/4 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN  
DIV

Operation and Service Manual for 6000 PSIG  
Oxygen Supply Cart 58E181231.

MAY 69 24P  
REPT. NO. 85-10-18  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, LIFE SUPPORT), (\*SPACE  
STATIONS, LIFE SUPPORT), (\*GROUND SUPPORT EQUIPMENT,  
INSTRUCTION MANUALS), SPACE CAPSULES, OXYGEN, HIGH  
PRESSURE VALVES, HANDBOOKS, MEASURING INSTRUMENTS, GAS  
FLOW, GAS CYLINDERS, PERSONNEL, OPERATION (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The report discusses the operation and service  
instructions for the 6000 PSIG oxygen supply cart,  
58E181231-1. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 775 22/4 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for ECS EFC Low Pressure Bench 52E180010, (U)

MAR 68 102P Petzold, Michael F. ;  
REPT. NO. 85-10-13  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED ATMOSPHERES), (\*SPACE STATIONS, CONTROLLED ATMOSPHERES), (\*SPACECRAFT COMPONENTS, CHECKOUT EQUIPMENT), SPACE CAPSULES, GROUND SUPPORT EQUIPMENT, CONTROL PANELS, PNEUMATIC DEVICES, ELECTRICAL EQUIPMENT, POWER SUPPLIES, INSTRUCTION MANUALS, PRESSURIZATION, MAINTENANCE, CALIBRATION (U)  
IDENTIFIERS: ECS(ENVIRONMENTAL CONTROL SYSTEM), ENVIRONMENTAL CONTROL SYSTEM, GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), TEST BENCHES (U)

The purpose of the report is to familiarize personnel with the operation and service of the Environmental Control System (ECS) Equipment Functional Check (EFC) Low Pressure Bench, 52E180010. The report presents a description of the test bench, its controls and functions, and servicing instructions for preventive maintenance. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 774 22/4

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Gemini B/MOL/L/V Electrical Interface Substitute 58E040504. (U)

SEP 68 51P  
REPT. NO. 85-10-8  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CHECKOUT EQUIPMENT), (\*SPACE STATIONS, CHECKOUT EQUIPMENT), (\*LAUNCH VEHICLES, \*CHECKOUT EQUIPMENT), SPACE CAPSULES, GROUND SUPPORT EQUIPMENT, INTERFACES, CONTROL PANELS, SIMULATORS, INSTRUCTION MANUALS, MAINTENANCE, IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), TITAN 3, TITAN 3M LAUNCH VEHICLES (U) (U)

The purpose of the report is to familiarize personnel with the operation and service of the Gemini B/MOL/L/V Electrical Interface Substitute, 58E040504. The report describes the console, associated panels and their functions. The console is used to electrically simulate the Gemini B Spacecraft when performing functional tests on the Gemini B/MOL Launch Vehicle. (Author) (U)

AD- 856 775

UNCLASSIFIED

PAGE 111

AD- 856 774

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 773 16/1 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for Gemini B/  
Laboratory Electrical Interface Substitute  
58E040503.

(U)

JAN 69 62P

REPT. NO. 85-10-7

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CHECKOUT EQUIPMENT),  
(\*SPACE STATIONS, CHECKOUT EQUIPMENT), (\*CHECKOUT  
EQUIPMENT, CONTROL PANELS), INTERFACES,  
MODELS(SIMULATIONS), PERSONNEL, MAINTENANCE,  
CALIBRATION, WIRING DIAGRAMS, ELECTRONIC EQUIPMENT,  
GROUND SUPPORT EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The report discusses the operation and service of  
the Gemini B/Laboratory Electrical  
Interface Substitute, 58E040503. The report  
describes the cabinet, its panels and their functions  
and service instructions for preventive maintenance.  
The Gemini B/Laboratory Electrical  
Interface Substitute simulates the Gemini B  
Spacecraft to permit premate testing of the  
Manned Orbiting Laboratory (MOL) vehicle  
without the spacecraft. (Author) (U)

AD- 856 773

UNCLASSIFIED

PAGE

112

AD- 856 772

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 772 22/2 17/7 9/2

MCDONNELL DCUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

MOL Baseline Requirements for Central, Test,  
and Reentry Modules of the Gemini B  
Computer Program. Volume III. MOL  
Baseline Equations Document. Part II.  
Data Item Number UC-228: Test Module  
Requirements.

(U)

68 166P

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3, Part 1, AD-  
856 771 and Volume 3, Part 3, AD-856 741.  
DESCRIPTORS: (\*MANNED SPACECRAFT, \*NAVIGATION  
COMPUTERS), (\*SPACE STATIONS, NAVIGATION COMPUTERS),  
SPECIFICATIONS, COMPUTER PROGRAMMING, INERTIAL  
NAVIGATION, TEST METHODS, CHECKOUT PROCEDURES  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

This volume contains the test module  
requirements. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 771 22/2 17/7 9/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

MOL Baseline Requirements for Central, Test, and Reentry Modules of the Gemini B Computer Program. Volume III. MOL Baseline Equations Document. Part I. Data Item Number UC-228: System Requirements, Central Module Requirements.

(U)

68 144P

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3, Part 2, AD-856 772 and Volume 3, Part 3, AD-856 741.

DESCRIPTORS: (\*MANNED SPACECRAFT, \*NAVIGATION COMPUTERS), (\*SPACE STATIONS, NAVIGATION COMPUTERS), SPECIFICATIONS, COMPUTER PROGRAMMING, INERTIAL NAVIGATION

(U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)

(U)

This document contains the requirements for the Central, Test, and Reentry modules of the Gemini B computer software program. The Central module contains the Standby mode, subroutines and other common programming as well as the programming required to use an Auxiliary Tape Memory to reprogram a portion of the computer memory. The Test module contains the software capabilities required to facilitate the calibration and checkout of the Gemini inertial guidance system during prelaunch operations. The Reentry module contains the guidance capabilities that are applicable to the return phase of the mission and contains the orbit navigation, retrograde time determination, and reentry modes. The equations that are to be implemented and the operational requirements are contained herein. (Author)

(U)

AD- 856 771

UNCLASSIFIED

PAGE

113

AD- 856 770

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 770 13/1 16/1 22/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

Operation and Service Manual for Coolant Fluid Transfer Kit 52E180184.

(U)

MAR 69 27P

REPT. NO. 85-10-10

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, COOLING + VENTILATING EQUIPMENT), (\*SPACE STATIONS, COOLING + VENTILATING EQUIPMENT), (\*GROUND SUPPORT EQUIPMENT, INSTRUCTION MANUALS), MAINTENANCE, COOLANTS, FLUID FILTERS, NITROGEN, HANDBOOKS, PRESSURIZATION, PERSONNEL, SPACE CAPSULES

(U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)

(U)

The report discusses the operation and service instructions for the coolant fluid transfer kit, 52E180184-1. The report presents a description of the transfer kit, its controls and their functions, and service instructions for preventive maintenance. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 855 769 19/1 22/4 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Hatch  
Actuator Test Fixture 52E040094, (U)NOV 67 31P Petzold, Michael F. ;  
REPT. NO. 85-10-4  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, EXPLOSIVE ACTUATORS),  
(\*SPACE STATIONS, EXPLOSIVE ACTUATORS), (\*EXPLOSIVE  
ACTUATORS, TEST EQUIPMENT), SPACE CAPSULES, SPACECRAFT  
CABINS, HATCHES, RELEASE MECHANISMS, CHECKOUT EQUIPMENT,  
GROUND SUPPORT EQUIPMENT, INSTRUCTION MANUALS. (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of this Space Technical Data  
Report (STR) is to familiarize personnel with  
the operation and service of the Hatch Actuator  
Test Fixture, 52E040094. This STR  
presents a description of the test fixture, its  
controls and functions, and servicing instructions  
for preventive maintenance. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 768 13/12 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Ejection  
Seat Functional Test Fixture 52E040089, (U)OCT 67 35P Petzold, Michael F. ;  
REPT. NO. 85-10-3  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, EJECTION SEATS),  
(\*SPACE STATIONS, EJECTION SEATS), (\*AEROSPACE SYSTEMS,  
INSTRUCTION MANUALS), SPACE CAPSULES, SPACECRAFT SEATS,  
SAFETY BELTS, RELEASE MECHANISMS, LOADS(FORCES),  
MAINTENANCE, CALIBRATION, (U)CALIBRATION (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The Ejection Seat Functional Test Fixture  
is used to support the spacecraft seat and simulate  
flight loads for checkout of the harness release  
mechanism. It also provides checkout of the seat/  
man separator. The purpose of the Space  
Technical Data Report (STR) is to  
familiarize personnel with the operation and service  
of the Ejection Seat Functional Test  
Fixture. The report presents a description of  
the test fixture, its controls and functions and  
servicing instructions for preventive maintenance.  
(Author) (U)

AD- 856 769

UNCLASSIFIED

PAGE

114

AD- 856 768

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 767 13/6 22/2

MCDONNELL DOUGLAS CORP ST LOUIS MO

Operation and Service Manual for Spacecraft  
Transportation Trailers 52E010016.

(U)

JUN 68 44P

REPT. NO. BS-10-1

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, TRANSPORTATION),  
(\*SPACE STATIONS, TRANSPORTATION), (\*TRAILERS,  
INSTRUCTION MANUALS), SPACE CAPSULES, GROUND SUPPORT  
EQUIPMENT, CHECKOUT EQUIPMENT, PITCH(MOTION), YAW,  
ADAPTERS, REENTRY VEHICLES, ROTATION, MAINTENANCE  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES), REENTRY MODULES (U)

The purpose of the Space Technical Data  
report (STDR) is to familiarize personnel with the  
operation and service of the Vertical and  
Horizontal Transportation Trailers. The  
STDR describes the trailers and Pitch Checkout  
Adapter Kit which is installed in the  
Horizontal Transportation Trailer for pitch and  
yaw checkout of the spacecraft. (Author) (U)

AD- 856 767

UNCLASSIFIED

PAGE

115

AD- 856 756

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 756 13/5 22/2

MCDONNELL AIRCRAFT CORP ST LOUIS MO

Test Plan Gemini B Adapter Separation  
Test - Abort Mode.

(U)

NOV 68 75P

REPT. NO. WAC-G846

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ABORT), (\*SPACE  
STATIONS, ADAPTERS), (\*ADAPTERS, SEPARATION), SPACE  
CAPSULES, HEAT SHIELDS, BULKHEADS, RETRO ROCKETS, SPACE  
CREWS, PACKS(PARACHUTE), TEST METHODS, REENTRY  
VEHICLES (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES), REENTRY MODULES (U)

The test described demonstrates the off-the-pad  
abort capability of the Gemini B spacecraft. A  
simulated Gemini B, including a heat shield and a  
large pressure bulkhead, attached to steel structure  
will be mounted on the HAFB sled test track. The  
adapter, attached between the Gemini and the fixed  
laboratory will be severed and the Gemini B  
Reentry Module will be propelled down the track  
by the retrograde rockets. Data will be collected  
during the test which will determine the following:  
The test sequence events, the abort environment on  
the heat shield, retrograde rocket area, blast shield  
and adapter. (Author) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 755 22/2 22/4

MCDONNELL AIRCRAFT CORP ST LOUIS MO

Gemini B - Ejection Seat System Test -  
Dual Ejection Test Plan.

JUL 68 19P

REPT. NO. MAC-F975

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, REENTRY VEHICLES),  
(\*SPACE STATIONS, EJECTION SEATS), (\*AEROSPACE SYSTEMS,  
CHECKOUT PROCEDURES), MODELS(SIMULATIONS),  
ANTHROPOMETRY, PHOTOGRAPHY, TEST FACILITIES, OPERATION,  
SPACE CAPSULES, (U)SPACE CAPSULES (U)  
IDENTIFIERS: EVALUATION, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The report discusses the general requirements, test  
configuration, and procedures of the Gemini B  
ejection seat, dual ejection test. (Author) (U)

AD- 856 755

UNCLASSIFIED

PAGE

116

AD- 856 753

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 753 14/4 22/2 22/4

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Gemini B Effectiveness Assessment Plan.

JAN 68 25P Chochohousek, L. D. :

REPT. NO. MCASTR0-F920

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, RELIABILITY), (\*SPACE  
STATIONS, RELIABILITY), (\*LAUNCH VEHICLES, RELIABILITY),  
SPACE CAPSULES, FAILURE, FAILURE(MECHANICS),  
FAILURE(ELECTRONICS), PREDICTIONS, QUALITY CONTROL, LIFE  
EXPECTANCY, REDUNDANT COMPONENTS, PROBABILITY, GROUND  
SUPPORT EQUIPMENT (U)  
IDENTIFIERS: FAILURE ANALYSIS, FAILURE, RATES, GEMINI,  
\*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, MEAN  
TIME BETWEEN FAILURES, \*MOL(MANNED ORBITING  
LABORATORIES), TITAN 2, TITAN 3 (U)

This report supports the Gemini B Pre-  
Ignition and Flight Effectiveness Model  
Reports. MAC Reports F921 and F919,  
respectively; the latter describe the techniques and  
formulae used to develop Gemini B subsystem and  
segment probability estimates and MCL System crew  
safety estimates based on individual 'black box'  
reliability estimates. This Effectiveness  
Assessment Plan details the procedures, ground  
rules and methods used to determine the 'black box'  
estimates based on (1) experience and test  
results and (2) generic or 'inherent' failure  
rates from handbook sources, and presents the  
formulae used to evaluate the success probabilities  
for various redundant configurations and equipment  
combinations. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 752 9/3 22/2

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Gemini B Electronic Systems Test Unit  
(ESTU) Test Plan.

(U)

APR 67 48P  
REPT. NO. E879  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ELECTRONIC EQUIPMENT),  
(\*SPACE STATIONS, ELECTRONIC EQUIPMENT), (\*ELECTRONIC  
EQUIPMENT, TEST METHODS), SPACE CAPSULES, TEST  
EQUIPMENT, ELECTROMAGNETIC COMPATIBILITY, ELECTRICAL  
EQUIPMENT (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The report describes the plan for testing the  
Gemini B electrical/electronic systems utilizing  
the Gemini B Electronic Systems Test Unit  
(ESTU). It establishes the test philosophy,  
describes the test article and test complex, defines  
the tests to be performed, gives the test  
documentation requirements, and presents the program  
schedules. (Author) (U)

AD- 856 752

UNCLASSIFIED

PAGE

117

AD- 856 750

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 750 22/2 20/11

MCDONNELL AIRCRAFT CORP ST LOUIS MO

Gemini B Structural Qualification Test  
Plan,

(U)

JAN 68 132P Harbison,G. D. ;  
REPT. NO. MAC-F746  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, STRUCTURAL  
PROPERTIES), (\*SPACE STATIONS, STRUCTURAL PROPERTIES),  
SPACE CAPSULES, STRUCTURAL MEMBERS, MECHANICAL  
PROPERTIES, TEST METHODS, STRESSES, SPECIFICATIONS,  
REENTRY VEHICLES, ADAPTERS, PARACHUTES, HEAT SHIELDS  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES), \*REENTRY MODULES (U)

The report outlines the current plans for  
conducting the structural-qualification tests for the  
Gemini 'B' spacecraft. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 749 22/2

MCDONNELL AIRCRAFT CORP ST LOUIS MO

Test Plan for Aerodynamic Heating and Pressure Tests of a 9-Percent Gemini B Re-Entry Configuration Model in the McDonnell Hypervelocity Impulse Tunnel,

(U)

FEB 67 31P Haefner, M. A. ;  
 REPT. NO. MAC-F373

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ATMOSPHERE ENTRY), (\*SPACE STATIONS, HYPERSONIC TEST VEHICLES), (\*REENTRY VEHICLES, HYPERSONIC CHARACTERISTICS), MODELS(SIMULATIONS), CONFIGURATION, HYPERSONIC WIND TUNNELS, FLARED AFTERBODIES, ANGLE OF ATTACK, FAIRINGS, THERMODYNAMICS (U)  
 IDENTIFIERS: \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), THERMOGRAPHIC MAPPING (U)

The purpose of this report is to present a test plan for thermodynamic heat transfer and pressure tests of a 9-percent Gemini B model in the hypervelocity impulse tunnel. The model will have interchangeable re-entry module-adaptor interconnect fairings which will simulate the NASA Gemini and Gemini B configurations. (Author) (U)

AD- 856 749

UNCLASSIFIED

PAGE

118

AD- 856 746

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 746 13/12 22/2

MCDONNELL AIRCRAFT CORP ST LOUIS MO

Gemini B Ejection Seat Functional Test  
 Air Drop Test Plan,

(U)

OCT 67 16P McCauley, D. E. ;  
 REPT. NO. MAC-F677  
 CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, EJECTION SEATS), (\*SPACE STATIONS, EJECTION SEATS), (\*EJECTION SEATS, DROP TESTS), SPACE CAPSULES, PACKS(PARACHUTE), SURVIVAL KITS, REDUNDANT COMPONENTS, AUTOMATIC, EXPLOSIVE ACTUATORS, PRESSURE SUITS, AEROSPACE SYSTEMS, ESCAPE SYSTEMS, DISCONNECT FITTINGS, TEST METHODS, SAFETY, SPACE CREWS (U)  
 IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The objective of the test is to demonstrate that the personnel recovery and survival equipment system conforms with astronautics drawings under conditions simulating those existing, after seat-man separation following emergency ejection. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 743 22/2 20/4

MCDONNELL DOUGLAS ASTRONAUTICS CO HUNTINGTON BEACH CALIF  
WESTERN DIV

MOL Rigid Body Fluctuating Pressure Test  
(1AL2). Volume I. Sequence Number  
B329. MOL Data Item UT-134. (U)

DESCRIPTIVE NOTE: Fluid dynamics final test and analysis  
rept..

JAN 69 189P Emerson, T. S. ;  
REPT. NO. DAC-62611-Vol-1  
CONTRACT: F04695-67-C-0029

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-856  
554L.

DESCRIPTORS: (\*MANNED SPACECRAFT, AERODYNAMIC  
CHARACTERISTICS), (\*SPACE STATIONS, PRESSURE), SPACE  
CAPSULES, SUPERSONIC CHARACTERISTICS, TRANSONIC  
CHARACTERISTICS, MODEL TESTS, SCALE, EXTENDABLE  
STRUCTURES, SHIELDING (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

Fluctuating pressure data obtained on the surface  
of a rigid 10% scale model of the MOL are  
analyzed. Space averaged aerodynamic design  
criteria in the form of octave band spectra are  
derived together with corresponding estimates of  
dynamic response. Longitudinal and lateral  
correlation lengths are evaluated on the meteoroid  
shield. An aerodynamic hypothesis explaining  
structural and fluctuating pressure trends is  
introduced. When combined with the Reynolds  
analogy, it furnishes a synthesis between vehicular  
dynamics, aerodynamics and heat transfer. Random  
vibration predictions reported are intended to  
qualitatively illustrate protuberance disturbance  
effects. (Author) (U)

AD- 856 743

UNCLASSIFIED

PAGE

119

AD- 856 742

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 742 13/12 22/2

AEROSPACE CORP EL SEGUNDO CALIF EL SEGUNDO TECHNICAL  
OPERATIONS

Orbiting Vehicle Nonmetallic Materials  
Combustion and Atmospheric Contaminant  
Control Standard for the MOL Orbiting  
Laboratory Program. (U)

DESCRIPTIVE NOTE: Technical operation rept.

MAY 68 75P  
REPT. NO. TOR-1001(2107-20)-1-a-rev-1  
CONTRACT: AF 04(695)-1001

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supersedes Rept. no. TOR-  
1001(2107-20)-1-A dated Feb 68.

DESCRIPTORS: (\*MANNED SPACECRAFT, FIRE SAFETY), (\*SPACE  
STATIONS, FIRE SAFETY), (\*MATERIALS, SPECIFICATIONS),  
SPACE CAPSULES, ORGANIC MATERIALS, FLAMMABILITY, ODORS,  
ELECTRIC INSULATION, EMBEDDING SUBSTANCES, ORGANIC  
COATINGS, TOXICITY, AIR POLLUTION,  
THRESHOLDS(PHYSIOLOGY), TEST EQUIPMENT, TEST METHODS,  
FIRE SAFETY (U)  
IDENTIFIERS: FLASH POINT, GEMINI, \*GEMINI B PROJECT,  
\*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES), OUTGASSING (U)

This specification delineates the conditions and  
requirements for use of nonmetallic materials in the  
MOL Orbiting Vehicles with respect to the  
flammability and toxicity hazards. The objective is  
to provide a high degree of safety. This  
specification does not include considerations for  
propellants and pyrotechnics. (Author, modified-  
PL) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 741 22/2 17/7 9/2

MCDONNELL DOUGLAS ASTRONAUTICS CO ST LOUIS MO EASTERN DIV

MOL Baseline Requirements for Central, Test, and Reentry Modules of the Gemini B Computer Program. Volume III. MOL Baseline Equations Document. Part III. Data Item Number UC-228: Reentry Module Requirements.

(U)

68 90P

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 3, Part 1. AD-856 771 and Volume 3, Part 2. AD-856 772.

DESCRIPTORS: (\*MANNED SPACECRAFT, \*NAVIGATION COMPUTERS), (\*SPACE STATIONS, NAVIGATION COMPUTERS), SPECIFICATIONS, COMPUTER PROGRAMMING, INERTIAL NAVIGATION, ATMOSPHERE ENTRY  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)

(U)

(U)

This volume contains the reentry module requirements.

(U)

AD- 856 741

UNCLASSIFIED

PAGE

120

AD- 856 740

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 740 22/2 21/8.2 21/2

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

GEMINI-B Pre-Ignition Effectiveness Model Report,

(U)

MAR 68 132P Payne, L. W. ;  
REPT. NO. MCASTRO-F921  
CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, SYSTEMS ENGINEERING), (\*SPACE STATIONS, SPACE CREWS), (\*SOLID PROPELLANT ROCKET ENGINES, IGNITION), SPACE CAPSULES, COMPUTER PROGRAMMING, PROBABILITY, FAILURE, SCHEDULING, COMMAND GUIDANCE, CONTROL SYSTEMS, POWER SUPPLIES, LAUNCH VEHICLES, COMMUNICATION AND RADIO SYSTEMS, TRACKING, PULSE CODE MODULATION, DISPLAY SYSTEMS, LIFE SUPPORT, RECOVERY

(U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), TITAN 3

(U)

The report presents the Gemini B Segment Pre-Ignition Effectiveness Model. The model is the tool for evaluating the pre-ignition effectiveness of the Gemini B in terms of the Probability of Launch-On-Time and the Probability of Prime Flight Crew Safety.  
(Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 739 13/12 22/2

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Gemini B Oxygen Safety Study. Volume  
I. Summary and Recommendations.

(U)

MAY 67 28P

REPT. NO. MCASTRO-F415-Vol-1  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-856  
8111.DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED  
ATMOSPHERES), (\*SPACE STATIONS, CONTROLLED ATMOSPHERES),  
(\*FIRE SAFETY, OXYGEN), SPACE CAPSULES, SPACE CREWS,  
LIFE SUPPORT, MATERIALS, FLAMMABILITY, ELECTRONIC  
EQUIPMENT, ELECTRICAL EQUIPMENT, AEROSPACE SYSTEMS,  
ESCAPE SYSTEMS (U)IDENTIFIERS: \*EMERGENCIES, \*ESCAPE SYSTEMS, GEMINI,  
\*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES,  
\*MOL(MANNED ORBITING LABORATORIES) (U)In view of the recent accidents related to  
spacecraft oxygen systems, a re-evaluation of the  
Gemini B baseline for the Manned Orbiting  
Laboratory Program was undertaken to identify  
potential oxygen hazards and indicate what can be  
done to minimize these hazards. (Author) (U)

AD- 856 739

UNCLASSIFIED

PAGE

121

AD- 856 737

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 737 22/2 20/4

MCDONNELL DCUGLAS ASTRONAUTICS CO HUNTINGTON BEACH CALIF  
WESTERN DIVMOL Fluid Dynamics Preliminary Data  
Report: Thrustor Plume Tests. Sequence  
Number B319. Item Data Number UT-132, (U)

MAR 69 123P Lofland, M. L. ;

REPT. NO. DAC-62749  
CONTRACT: F04695-67-C-0029

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, \*NOZZLE GAS FLOW),  
(\*SPACE STATIONS, NOZZLE GAS FLOW), SPACE CAPSULES,  
EXHAUST GASES, IMPACT, SURFACES, PANELS, THERMAL  
RADIATION, CONTAMINATION, ROCKET NOZZLES (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES), PLUVES (U)An experimental test program was conducted to  
assess the effects of rocket exhaust plume  
impingement on MOL vehicle surfaces and equipment.  
Testing was performed in a vacuum chamber by use of  
flat panels to represent vehicle surfaces and a  
subscale thruster. The program included surface  
heating tests and exhaust contamination  
investigations, with emphasis on the latter.  
Devices and techniques to control thruster  
contamination were evaluated. Test data included  
plume mapping and thermal heating measurements; in  
situ measurements of thermal radiative and optical  
properties of selected contamination specimens;  
laboratory analyses of contamination deposits; and  
movie and still photographic coverage.  
(Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 733 22/2 20/4

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Gemini B Aerodynamic Data Book. Volume II. Static and Oscillatory Aerodynamic Pressures and Airload Distributions.

MAR 67 37P

REPT. NO. MCASTRO-F203-Vol-2

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, AERODYNAMIC CHARACTERISTICS), (\*SPACE STATIONS, AERODYNAMIC CHARACTERISTICS), SPACE CAPSULES, AERODYNAMIC LOADING, DISTRIBUTION, PRESSURE, BUFFETING, OSCILLATION, STATISTICAL DATA, ADAPTERS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

Contents: Overall aerodynamic data, static pressures and airload distributions; Unsteady pressure intensity and spatial correlations over the adapter. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 693 22/2 9/1

AEROSPACE CORP EL SEGUNDO CALIF MOL SYSTEMS ENGINEERING OFFICE

Wiring Harness Specification, (U)

APR 68 27P Lewotsky, F. ;

REPT. NO. TOR-0158(3107-28)-2

CONTRACT: F04695-67-C-0158

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ELECTRIC CABLES), (\*SPACE STATIONS, ELECTRIC CABLES), (\*ELECTRIC CABLES, SPECIFICATIONS), SPACE CAPSULES, SUPPORTS, COMPATIBILITY, FLAMMABILITY, ELECTRIC CONNECTORS, ELECTRIC WIRE (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The specification covers the general requirements for electrical wiring harnesses external to components which are installed in spacecraft; it shall be used with specification MIL-W-8160 whose requirements it expands. (Author) (U)

AD- 856 733

UNCLASSIFIED

PAGE

122

AD- 856 693

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 691

22/2

AEROSPACE CORP EL SEGUNDO CALIF EL SEGUNDO TECHNICAL OPERATIONS

The Hypersonic Aerodynamic Characteristics of the Gemini Re-Entry Module Based on a Statistical Analysis of Wind Tunnel Test Data.

(U)

JUN 68 67P Pershing, Bernard M. ;  
REPT. NO. TOR-0158(3107-15)-8  
CONTRACT: FO4695-67-C-0158

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ATMOSPHERE ENTRY), (\*SPACE STATIONS, HYPERSONIC TEST VEHICLES), (\*REENTRY VEHICLES, HYPERSONIC CHARACTERISTICS), MODELS(SIMULATIONS), PREDICTIONS, CONFIGURATION, HYPERSONIC WIND TUNNELS, LOADS(FORCES), THEORY, PLASMA SHEATHS, AERODYNAMIC HEATING, HEAT SHIELDS, STATISTICAL ANALYSIS, FLARED AFTERBODIES, ANGLE OF ATTACK IDENTIFIERS: LOADS(FORCES), \*GEMINI B PROJECT, GRAPHS(CHARTS), \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

A set of hypersonic aerodynamic characteristics has been obtained for the Gemini re-entry module by a least squares curve fit of the appropriate ground test data to equation forms which are based on the related flow phenomena and simulation requirements. (Author) (U)

AD- 856 691

UNCLASSIFIED

PAGE

123

AD- 856 690

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 690 17/7 22/2 22/4

AEROSPACE CORP EL SEGUNDO CALIF EL SEGUNDO TECHNICAL OPERATIONS

Preliminary Gemini B Guidance Equations for the MOL Mission.

(U)

DESCRIPTIVE NOTE: Technical operating rept.,  
JAN 68 88P Hayden, W. L. ; Linquiti, A.  
A. ;  
REPT. NO. TOR-0158(3107-15)-7  
CONTRACT: FO4695-67-C-0158

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ALL INERTIAL GUIDANCE), (\*SPACE STATIONS, NAVIGATION), SPACE CAPSULES, INJECTION GUIDANCE, MIDCOURSE GUIDANCE, APOGEE, PERIGEE, STEERING, LAUNCH VEHICLES, SUBROUTINES, EQUATIONS IDENTIFIERS: CLOSED LOOP SYSTEMS, CONTROL, CONTROL SYSTEMS, GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), TITAN 3 (U)

This report provides a description of the guidance equations that are planned for Module III of the Gemini B Computer Program. This module contains the ascent mode, including the Orbit Adjust capability and the Abort Retrotime Predict mode. The equations for the latter are not included in this report. The main logic flow of the equations presented, however, is compatible with, and provides entrance and exit to and from, the Abort Retrotime Predict mode. (Author) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 687 13/12 22/2

AEROSPACE CORP EL SEGUNDO CALIF MOL SYSTEMS ENGINEERING OFFICE

MOL Safety Evaluation Based on Apollo 204 Review Board Findings and Recommendations, and Brooks Air Force Base Accident Investigation Board Conclusions.

SEP 67 58P  
REPT. NO. TOR-0158(3107-20)-1  
CONTRACT: F04695-67-C-0158

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED ATMOSPHERES), (\*SPACE STATIONS, CONTROLLED ATMOSPHERES), (\*FIRE SAFETY, REVIEWS), SPACE CAPSULES, OXYGEN, SPACE CREWS, MATERIALS, FLAMMABILITY, TRAINING, MAINTENANCE, ELECTRIC WIRE, SYSTEMS ENGINEERING, ACCIDENTS  
IDENTIFIERS: GEMINI, \*GEMINI 8 PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The report narrates the evaluation of the MOL program with respect to each Apollo 204 Review Board finding and recommendation and the conclusions of the Brooks Air Force Base Accident Investigation Board. (Author) (U)

AD- 856 687

UNCLASSIFIED

PAGE

124

AD- 856 677

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 677 9/5 22/2

MCDONNELL CC ST LOUIS MO

Vibration Test of 58T030051-1 Gemini B Adapter Relay Panel Assembly.

DESCRIPTIVE NOTE: Final rept.,  
MAR 67 198P Stewart, H. L. ;  
REPT. NO. 058-4VB.04

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, PANEL BOARDS(ELECTRICITY)), (\*SPACE STATIONS, PANEL BOARDS(ELECTRICITY)), (\*PANEL BOARDS(ELECTRICITY)), RELIABILITY(ELECTRONICS)), SPACE CAPSULES, RELAYS, ENVIRONMENTAL TESTS, VIBRATION, ACCEPTABILITY, ADAPTERS, ACCELERATION, STRUCTURAL PROPERTIES  
IDENTIFIERS: GEMINI, \*GEMINI 8 PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

Vibration testing was conducted on a 58T030051-1 Relay Panel Assembly to determine if the assembly was electrically and structurally capable of withstanding the vibration environment specified in Test Request 058-AVB.04. The vibration-test program was conducted in six phases. Phases 1 and 2 consisted of determining the accelerations in the transverse axes of the exciter systems, without and with the hard-mounted relay panel. Phases 3 and 4 were a frequency-response test and a random-vibration test with the relay panel shock mounted. Phases 5 and 6 were a frequency-response test and a random-vibration test with the relay panel hard mounted. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 675 14/5 22/2

MCDONNELL CO ST LOUIS MO

Vibration Test of the 52-88115-21 Light Assembly, Photographic. (U)

DESCRIPTIVE NOTE: Final rept.,

OCT 67 11P

REPT. NO. 058-AHF.01 Novak, E. L. ;

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, PHOTOGRAPHIC LIGHTING SYSTEMS), (\*SPACE STATIONS, PHOTOGRAPHIC LIGHTING SYSTEMS), (\*PHOTOGRAPHIC LIGHTING SYSTEMS, RELIABILITY(ELECTRONICS)), SPACE CAPSULES, VIBRATION, DIRECT CURRENT, ACCELEROMETERS, CHECKOUT EQUIPMENT, VIBRATORS(MECHANICAL), VISUAL INSPECTION (U)

IDENTIFIERS: \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The report discusses results of vibration testing of a photographic light assembly intended for use on the MOL project. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 674 13/1 22/2

MCDONNELL CO ST LOUIS MC

Interface Heat Exchanger System Test. (U)

DESCRIPTIVE NCIE: Final rept.

APR 69 15P

REPT. NO. 058-ATC.08

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, \*HEAT EXCHANGERS), (\*SPACE STATIONS, HEAT EXCHANGERS), SPACE CAPSULES, INTERFACES, HEAT TRANSFER, PERFORMANCE(ENGINEERING) (U)

IDENTIFIERS: EVALUATION, GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

A production Gemini B/Lab Interface Heat Exchanger Assembly was tested to determine (1) its heat transfer characteristics, and (2) system capability to carry the expected heat loads without excessive MOL loop temperature variation. Data was obtained at ground level and at simulated flight environmental conditions. Interface contact forces were at the low and high ends of the installation tolerances. (Author) (U)

AD- 856 675

UNCLASSIFIED

PAGE

125

AD- 856 674

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 673 6/17 13/7 22/2

MCDONNELL CO ST LOUIS MO

Reverse Pressure Effect on Suit Demand  
Regulator.

(U)

DESCRIPTIVE NOTE: Final rept.

MAR 68 14P

REPT. NO. 058-ATC-06

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, PRESSURE SUITS),  
(\*SPACE STATIONS, PRESSURE SUITS), (\*PRESSURE SUITS,  
\*PRESSURE REGULATORS), SPACE CAPSULES, PNEUMATIC VALVES,  
OXYGEN, ENVIRONMENTAL TESTS, RELIABILITY (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

A Gemini B Suit Oxygen Demand and  
Relief Regulator Valve, P/N 52-83700-1171,  
was exposed to a simulated cabin pressure of 0.1 psia  
for 33 days. The gas supply to the regulator was  
closed during the 33 day exposure, permitting the  
simulated suit circuit pressure to decay to 0.1 psia.  
Following the 33 day exposure the regulator outlet  
demand diaphragm was subjected to a reverse  
pressurization of 3.5 psi simulating the reactivation  
of the Gemini B Environmental Control  
System. These tests were performed to  
demonstrate that the qualified NASA Gemini  
regulator valve would operate satisfactory when  
exposed to the Gemini B conditions of orbital  
storage and reverse pressure. Functional tests  
performed on the regulator before and after the 33  
day exposure indicated that the regulator performance  
was satisfactory except that the maximum suit  
pressure control point after the exposure was out of  
specification. (Author) (U)

AD- 856 673

UNCLASSIFIED

PAGE

126

AD- 856 672

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 672 22/2

MCDONNELL CC ST LOUIS MO

Guidance and Control Mechanics Test -  
Attitude Control System Analytical  
Performance Verification.

(U)

DESCRIPTIVE NOTE: Final rept.

APR 68 75P

REPT. NO. 058-AGF-01

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, \*ATTITUDE CONTROL  
SYSTEMS), (\*SPACE STATIONS, ATTITUDE CONTROL SYSTEMS),  
SPACE CAPSULES, STABILIZED PLATFORMS, FLIGHT SIMULATORS,  
GIMBALS, GYRO STABILIZERS, TEST METHODS (U)  
IDENTIFIERS: CLOSED LOOP SYSTEMS, CONTROL, CONTROL  
SYSTEMS, GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING  
LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

Closed-loop attitude control system analytical  
performance verification tests were conducted for the  
Gemini B spacecraft and the mated Gemini B-  
Manned Orbiting Laboratory (MOL)  
configurations. Both manual and automatic modes  
were tested. The primary concern was the ability  
to control and display accurately attitude and rates  
of the Gemini B spacecraft. Tests of the  
inertial platform were performed on a 3-Axis  
Flight Motion Simulator, driven by an analog  
computer. The analog computer also mechanized the  
dynamic equations of motion for both configurations.  
(Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 671 22/2 11/9

MCDONNELL CO ST LOUIS MO

Physical Properties of Vacuum De-Oiled  
DC-325 Ablative Material.

(U)

DESCRIPTIVE NOTE: Final rept.  
SEP 68 10P  
REPT. NO. 058-AKA.07  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, HEAT SHIELDS), (\*SPACE STATIONS, HEAT SHIELDS), (\*SILICONE PLASTICS, \*ABLATION), SPACE CAPSULES, DEGASIFICATION, OILS, SILICONES, VACUUM, PHYSICAL PROPERTIES  
(U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)  
(U)

The purpose of the test was to determine the effects of vacuum de-oiling on the physical properties of DC-325 silicone elastomeric ablative material. Thermal conductivity, Shore A Hardness, size, weight, tensile strength, and elongation were the physical properties measured before and after the vacuum exposure. All physical properties showed appreciable change except thermal conductivity; however, the weight and dimensional changes were slight. (Author)  
(U)

AD- 856 671

UNCLASSIFIED

PAGE

127

AD- 856 670

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 670 13/11 13/1 22/2

MCDONNELL CO ST LOUIS MO

Coolant Pump Assembly, Low Temperature  
Start Test.

(U)

DESCRIPTIVE NOTE: Final rept.  
APR 68 16P  
REPT. NO. 058-AEI.02  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.  
DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED ATMOSPHERES), (\*SPACE STATIONS, CONTROLLED ATMOSPHERES), (\*COOLANT PUMPS, ENVIRONMENTAL TESTS), PERFORMANCE(ENGINEERING), OPERATION, TEST METHODS, ACCEPTABILITY  
(U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)  
(U)

Tests were conducted to demonstrate the ability of the Gemini 'B' Environmental Control System Coolant Pumps to start consistently, under low temperature environmental conditions, using two different power sources. (Author)  
(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 669 13/5 20/11 22/2

MCDONNELL CO ST LOUIS MO

Tension and Shear Strength of Inserts in the  
Gemini B Blast Shield.

(U)

DESCRIPTIVE NOTE: Final rept.

DEC 68 16P

REPT. NO. 058-AKA.04.02

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, SHIELDING), (\*SPACE STATIONS, SHIELDING), (\*METAL PLATES, DISCONNECT FITTINGS), SPACE CAPSULES, SHEAR STRESSES, TENSILE PROPERTIES, STRUCTURAL MEMBERS, LOADS(FORCES) IDENTIFIERS: \*BLAST SHIELDS, GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

Tests were conducted to determine the tension and shear strength of plug inserts installed in the Gemini 'B' blast shield. The test was required because an accurate value of the strength of the plugs cannot be determined analytically. Plug inserts are used on the blast shield to support the interface heat exchanger, guillotine brackets, and the separation spring pads. (Author) (U)

AD- 856 669

UNCLASSIFIED

PAGE

128

AD- 856 668

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 668 13/5 22/2

MCDONNELL CC ST LOUIS MC

Torque Versus Preload. Gemini B RV/  
Adapter Tie Strap.

(U)

DESCRIPTIVE NOTE: Final rept.

MAY 68 11P

REPT. NO. 058-ASA.05

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, REENTRY VEHICLES), (\*SPACE STATIONS, REENTRY VEHICLES), (\*ADAPTERS, \*BOLTS), SPACE CAPSULES, TORQUE, LOADS(FORCES), TENSILE PROPERTIES, LOCKING FASTENER DEVICES IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), REENTRY MODULES (U)

The purpose of the test was to determine nut torque versus tension load in the bolt for a nut and bolt combination of the size and material that is used for the Gemini B Adapter/Reentry Module mating straps. Thirty tests of nut torque versus bolt load measurement were conducted on twelve test assemblies. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 667 13/1 22/2

MCDONNELL CO ST LOUIS MO

Interface Heat Exchanger Interstitial  
Material Element Test. Heat Transfer.

(U)

DESCRIPTIVE NOTE: Final rept.,

OCT 67 37P Holtz, Ronald L. ;

REPT. NO. 058-ATC.04

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, HEAT EXCHANGERS),  
(\*SPACE STATIONS, HEAT EXCHANGERS), (\*HEAT EXCHANGERS,  
HEAT TRANSFER), SPACE CAPSULES, INTERFACES, HEAT  
TRANSFER COEFFICIENTS, SILICONES, GREASES, SILVER,  
POWDERS, RELIABILITY (U)  
IDENTIFIERS: EVALUATION, GEMINI, \*GEMINI B PROJECT,  
\*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The purpose of this test was to evaluate the  
interface heat transfer capability of the Gemini  
B-MOL interface heat exchanger interstitial  
material (a silicone grease - silver powder  
mixture) at simulated orbital pressures and  
expected temperatures. Tests were conducted with  
and without interstitial material between the  
interface surfaces of the simulated heat exchanger  
and the interface loads simulated were the minimum  
and maximum anticipated in the actual installation.  
The average interface heat transfer coefficients  
obtained were 186 Btu/hr-sq ft F for the clean  
surfaces and 661 Btu/hr-sq ft F using  
interstitial grease. (Author) (U)

AD- 856 667

UNCLASSIFIED

PAGE

129

AD- 856 665

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 665 13/11 10/2 22/2

MCDONNELL CO ST LOUIS MO

Coolant Pump Power Inverter - Breadboard  
Evaluation Testing.

(U)

DESCRIPTIVE NOTE: Final rept.,

SEP 67 12P Mooney, R. W. ;

REPT. NO. 058-AEI.01.06

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, INVERTERS), (\*SPACE  
STATIONS, INVERTERS), (\*INVERTERS, POWER SUPPLIES),  
(\*ELECTRIC MOTORS, COOLANT PUMPS), SPACE CAPSULES,  
RELIABILITY/ELECTRONICS), CLOSED ECOLOGICAL SYSTEMS  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

Tests were conducted to establish the running  
characteristics of a motor (52-83700-403, S/N  
123-111) used to drive the coolant pumps of the  
Environmental Control System in the Gemini  
B spacecraft. The three-phase power sources for  
the motor were breadboard models of the spacecraft  
high and low power inverters. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 664 22/2 22/1 13/12

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Gemini B Oxygen Safety Study. Volume VIII. Inflight Emergency Operations and Procedures.

(U)

MAY 67 43P

REPT. NO. MCASTRO-F415-Vol-8

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 7, AD-856 663L, and Volume 9, AD-856 550L.  
 DESCRIPTORS: (\*MANNED SPACECRAFT, FIRE SAFETY), (\*SPACE STATIONS, FIRE SAFETY), SPACE CAPSULES, HAZARDS, OXYGEN, SPACECRAFT CABINS, FIRE ALARM SYSTEMS, PRESSURIZATION, RARE GASES, FIRE EXTINGUISHERS, FLAMMABILITY, PRESSURE SUITS, OXYGEN MASKS, PURGING, ABORT, PARACHUTES, TRAINING, TIME, DESIGN

IDENTIFIERS: DEPRESSURIZATION, \*EMERGENCY PROCEDURES, GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), REVISIONS (U)

Ten fire contingency situations in the Gemini B and the Laboratory are identified. The associated crew procedures, equipment requirements and, in some cases, time lines are analyzed. Recommendations to increase fire safety are made. (U)

AD- 856 664

UNCLASSIFIED

PAGE

130

AD- 856 663

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 663 13/12 22/2

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Gemini B Oxygen Safety Study. Volume VII. Simplified Two Gas System.

(U)

MAY 67 31P

REPT. NO. MCASTRO-F415-Vol-7

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 6, AD-856 662L, and Volume 8, AD-856 661L.  
 DESCRIPTORS: (\*MANNED SPACECRAFT, FIRE SAFETY), (\*SPACE STATIONS, FIRE SAFETY), SPACE CAPSULES, HAZARDS, OXYGEN, PRESSURE, CONTROLLED ATMOSPHERES, HELIUM, CHECKOUT PROCEDURES, CHECKOUT EQUIPMENT, GAS FLOW, GAS FILTERS, CHECK VALVES, CONTROL PANELS, UNBILICAL CORDS(AEROSPACE), PRESSURE SUITS, VENTING, DETECTORS, RELIABILITY, AEROSPACE MEDICINE  
 IDENTIFIERS: ENVIRONMENTAL CONTROL SYSTEMS, GEMINI, \*GEMINI B PROJECT, MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), PARTIAL PRESSURE, REVISIONS (U)

A simplified two-gas system for the Gemini B is defined which provides a mixed gas atmosphere in the cabin and requires no diluent gas make up on board the spacecraft. The system approach is aimed primarily at the elimination of the hazard during ground operations when oxygen pressures are in the 15 to 20 psi range with the present system. Because of the short duration of the crew occupancy after lift-off and prior to crew transfer to the Laboratory, the system provides a mixed gas atmosphere as long as cabin repressurization is not required. Supporting technical analyses are presented including bio-medical considerations, gas flow rates, atmosphere changes during flight, monitoring requirements, and reliability evaluation. Additional testing required is identified. (U)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 662 13/12 22/2

MCDONNELL ASTRONAUTICS CO ST LOUIS MO

Gemini B Oxygen Safety Study. Volume VI. Procedures - Ground Testing and Flight.

(U)

MAY 67 26P  
 REPT. NO. MCASTRO-F415-Vol-6  
 CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 5, AD-856 814L, and Volume 7, AD-856 663L.

DESCRIPTORS: (\*MANNED SPACECRAFT, FIRE SAFETY). (\*SPACE STATIONS, FIRE SAFETY). (\*FIRE SAFETY, CHECKOUT PROCEDURES). SPACE CAPSULES, HAZARDS, OXYGEN, SPACECRAFT CABINS, CONTROLLED ATMOSPHERES, TEST FACILITIES, SPACECRAFT DEBRIS, CLEANING, NITROGEN, HELIUM, LEAKAGE(FLUID), HYPERGOLIC ROCKET PROPELLANTS, PYROTECHNICS, FAILURE, PRESSURE SUITS, HYPOXIA, IDENTIFIERS: EMERGENCY PROCEDURES, GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The procedures to be used in Gemini B in-plant testing and operations, ground checkout and pre-launch testing and operations are discussed relative to safe operations with respect to fire. The procedures examined consist of those associated with the Environmental Control System (ECS), the Reentry Control System (RCS), and the Pyrotechnic System since these systems present the greatest hazard with respect to fire. The primary area of consideration is inside the pressure cabin, with hatches closed and a 100% oxygen atmosphere. Therefore, principal concern is focused on ECS cabin procedures during in-plant, ground checkout and pre-launch operations. Flight operations are discussed in Volume VIII (AD-856 664). The procedures reviewed are non-technical, since the electrical components do not impose critical or special procedures with respect to fire safety. (Author) (U)

AD- 856 662

UNCLASSIFIED

PAGE

131

AD- 856 653

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 658 22/2

MCDONNELL CC ST LOUIS MO

Re-Entry Module/Adapter Interconnect  
 Fanning Aerodynamic Heating Wind Tunnel  
 Tests AEDC Tunnel B.

(U)

DESCRIPTIVE NOTE: Final rept.,  
 DEC 67 19P Sheldon, G. J. ;  
 REPT. NO. 058-ATD-02.01  
 CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ADAPTERS). (\*SPACE STATIONS, ADAPTERS). (\*FAIRINGS, HEAT TRANSFER). SPACE CAPSULES, WIND TUNNEL MODELS, SCALE, MODEL TESTS, REENTRY VEHICLES, AERODYNAMIC HEATING, CYLINDRICAL BODIES, ANGLE OF ATTACK, HYPERSONIC CHARACTERISTICS, IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

Testing was conducted on three, 9 percent scale Gemini models and a 5.8-inch diameter hemisphere cylinder to obtain qualitative and semi-quantitative information on the local heat transfer rate induced on the Gemini afterbody by the module/adapter interconnect fairing. These models were cast using RTV 60 silicone rubber. A 0.3-inch minimum thickness of rubber was maintained over an aluminum core. The Gemini models were tested at 160, 165, and 170 deg angle of attack. The hemisphere cylinder was tested at 0 deg angle of attack. Testing was conducted at Mach 8 at Reynolds numbers per foot of 3.8, 3.5, 3.0, 2.0, and 1.0 x 10 to the 6th power. Prior to each run, models were coated with paint. Color motion pictures were made during the test to obtain color change data, and still photographs of the models were taken after each run. Forty-seven runs were completed during Series I tests and 27 runs during Series II tests. (Author) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMQ7

AD- 856 657 9/1 22/2

MCDONNELL CO ST LOUIS MO

Gemini B Limit Switches. Spacecraft Pressure Effects.

(U)

DESCRIPTIVE NOTE: Final rept.,  
JUN 67 12P Woods, T. G. ;  
REPT. NO. 058-AEH.01  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ELECTRIC SWITCHES),  
(\*SPACE STATIONS, ELECTRIC SWITCHES), (\*ELECTRIC  
SWITCHES, RELIABILITY(ELECTRONICS)), PRESSURIZATION,  
OPERATION, PERFORMANCE(ENGINEERING),  
FAILURE(ELECTRONICS), SPACE CAPSULES, SPECIFICATIONS (U)  
IDENTIFIERS: \*GEMINI B PROJECT, \*LIMIT SWITCHES,  
\*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

Tests were performed on four limit switches to determine the effects of pressure differentials on their operating characteristics. Each switch was subjected to low pressure environments of 10 psia, 5 psia, and 0.1 psia, and to high pressure environments of 20 psia, 25 psia, and 30 psia. The actuation and reset forces were measured before and after the low and high pressure environments. (Author) (U)

AD- 856 657

UNCLASSIFIED

PAGE

132

AD- 856 656

UNCLASSIFIED

ZOMQ7

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMQ7

AD- 856 656 13/5 22/2

MCDONNELL CO ST LOUIS MO

Heat Shield Hatch Acceptance Test for Functional Fit at Temperature.

(U)

DESCRIPTIVE NOTE: Final rept.  
DEC 68 18P  
REPT. NO. 058-ARB.04.01  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, HEAT SHIELDS), (\*SPACE STATIONS, HEAT SHIELDS), (\*HEAT SHIELDS, FASTENINGS), HATCHES, SPACE CAPSULES, CONFIGURATION, TORQUE, TEMPERATURE, LOCKING FASTENER DEVICES, TEST METHODS, CHECKOUT PROCEDURES (U)  
IDENTIFIERS: CREW TRANSFER TUNNELS, GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The heat shield-hatch assembly for Gemini B is designed to provide access to the crew-transfer tunnel during the orbital phase of a mission. The hatch latching mechanism has been successfully tested at simulated altitude and temperature (per Test Request 058-ARB.04). The purpose of the testing described in the report was to demonstrate that there is an acceptable functional fit between the heat shield hatch and the heat shield at operating temperatures. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 655 9/1 13/12 22/2

MCDONNELL CO ST LOUIS MO

Massive Overload of Kynar (5M974 and 5M975) Insulated Wire in Air.

(U)

DESCRIPTIVE NOTE: Final rept.,

NOV 67 22P Lamirand, J. B. ;

REPT. NO. 058-AED.03

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SPACE STATIONS, FIRE SAFETY), (\*MANNED SPACECRAFT, FIRE SAFETY), (\*ELECTRIC WIRE, FAILURE(ELECTRONICS)), SPACE CAPSULES, FIRE RESISTANT MATERIALS, ELECTRIC INSULATION, DIELECTRIC PROPERTIES, VINYL PLASTICS, HALOCARBON PLASTICS, FLUORINE COMPOUNDS, ELECTRICAL RESISTANCE

(U)

IDENTIFIERS: \*GEMINI B PROJECT, \*LOADING(ELECTRICAL), \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), VINYLIDENE FLUORIDE POLYMERS

(U)

Results are presented for a test conducted to evaluate the electrical overload characteristics of wire bundles fabricated from polyvinylidene outer space wire. The two test specimens were subjected to massive overload tests in ambient air. Each test specimen was also subjected to a preliminary dielectric strength test at 1500 Vrms.

(Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 654 9/1 13/12 22/2

MCDONNELL CO ST LOUIS MO

Massive Overloads on Teflon, Kapton, and Kynar Insulated Wire in an Oxygen Atmosphere.

(U)

DESCRIPTIVE NOTE: Final rept.,

NOV 67 61P Lamirand, J. B. ;

REPT. NO. 058-AED.02

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

Availability: Microfiche copies only.  
DESCRIPTORS: (\*MANNED SPACECRAFT, ELECTRIC CABLES), (\*SPACE STATIONS, ELECTRIC CABLES), (\*ELECTRIC INSULATION, FLAMMABILITY), SPACE CAPSULES, HALOCARBON PLASTICS, CONTROLLED ATMOSPHERES, OXYGEN, ELECTRIC CURRENTS, DIELECTRIC PROPERTIES, COMBUSTION, COMBUSTION PRODUCTS, GAS ANALYSIS, AIR POLLUTION, EMBEDDING SUBSTANCES

(U)

IDENTIFIERS: EVALUATION, GEMINI, \*GEMINI B PROJECT, KAPTON, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)

(U)

Results are presented for a series of overload tests to provide comparative data relating to the flammability characteristics in a 5.0 psia oxygen atmosphere of wire bundles fabricated from Teflon, Kapton (H-Film), and Kynar wire. Six test specimens were subjected to a massive overload test, five specimens to a controlled step-current overload test, and one specimen to a step-current test for the purpose of obtaining a quantitative and qualitative analysis of the chamber atmosphere. Each of the specimens was also subjected to a preliminary dielectric-strength test at 1500 Vrms.

(U)

(Author)

AD- 856 655

UNCLASSIFIED

PAGE

133

AD- 856 654

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 653 13/5 22/2

MCDONNELL AIRCRAFT CO ST LOUIS MO

Static Test of the Gemini B Adapter for the  
Critical Combination of Ascent Phase Loads  
and Elevated Temperature.

(U)

DESCRIPTIVE NOTE: Final rept.

NOV 68 175P

REPT. NO. MAC-058-ASA-04

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, SPACECRAFT  
COMPONENTS), (\*SPACE STATIONS, ADAPTERS), (\*ADAPTERS,  
ENVIRONMENTAL TESTS), SIMULATION, AERODYNAMIC HEATING,  
LOADS(FORCES), DEFLECTION, THERMAL PROPERTIES,  
INTERFACES, BULKHEADS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, (U)  
GRAPHS(CHARTS), \*MANNED ORBITING LABORATORIES, (U)  
\*MOL(MANNED ORBITING LABORATORIES)

The report describes an environmental test  
performed on a structural adapter. The purpose of  
this test was to demonstrate the structural integrity  
of the Gemini 'B' Adapter under the critical  
combination of load, elevated temperature, and  
temperature differentials between the inner and outer  
structural skins of the hat sections. (Author) (U)

AD- 856 653

UNCLASSIFIED

PAGE

134

AD- 856 652

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 652 9/3 13/1 22/2

MCDONNELL CC ST LOUIS MC

Torque vs Motor Input Current for Coolant  
Pump Motor, P/N 52-83700-403, S/N 123-  
111.

(U)

DESCRIPTIVE NOTE: Final rept.,

JUN 67 4P

REPT. NO. 058.AEI.01.01

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED  
ATMOSPHERES), (\*SPACE STATIONS, CONTROLLED ATMOSPHERES),  
(\*ELECTRIC MOTORS, COOLANT PUMPS), TORQUE, OPERATION,  
ELECTRICAL PROPERTIES, SPECIFICATIONS,  
FAILURE(ELECTRONICS) (U)  
IDENTIFIERS: \*GEMINI B PROJECT, \*MANNED ORBITING  
LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The test request was initiated to determine the  
electrical stall characteristics of either the motors  
used in the Coolant Pump Assembly. The  
coolant pump motor is a 3-phase, 60 cycle, 12 v rms  
unit. It is installed in coolant pump assemblies  
to drive the gears of the pump cartridge which  
establishes the flow of coolant fluid in the  
spacecraft. This system was utilized in the  
Gemini 'A' spacecraft, and it is proposed for use  
in the Gemini 'B' and Airlock programs. (U)  
(Author)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 651 19/1 22/2

MCDONNELL CO ST LOUIS MO

Dissection of Hatch Actuator Breech Cartridge, P/N A218-10 (15-1006).

DESCRIPTIVE NOTE: Final rept..

FEB 67 SP Landholt, L. ;

REPT. NO. 058-AMB.01

UNCLASSIFIED REPORT

(U)

DESCRIPTORS: (\*MANNED SPACECRAFT, HATCHES), (\*SPACE STATIONS, HATCHES), (\*HATCHES, \*EXPLOSIVE ACTUATORS), CARTRIDGES(PAD), SPACE CAPSULES, ASSEMBLY, WEIGHT, PARTICLE SIZE, EXPLOSIVE CHARGES, NITRATES (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The A218-10 Cartridge which was qualified for the NASA Gemini, is a pyrotechnic device which is used to initiate the breech of the hatch actuator. In order to fabricate identical cartridges for Gemini B, it was necessary to ascertain the nominal particle size and total weight of the BKN03 pyrotechnic material in the output charge of the cartridge. (Author) (U)

AD- 856 651

UNCLASSIFIED

PAGE

135

AD- 856 574

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 574 22/2 13/11

MCDONNELL CC ST LOUIS MO

Functional Tests on Two Gemini B Coolant Pump Assemblies.

(U)

DESCRIPTIVE NOTE: Final rept..

AUG 67 6P Meier, Craig A. ;

REPT. NO. 058-AEI.01.04

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED ATMOSPHERES), (\*SPACE STATIONS, CONTROLLED ATMOSPHERES), (\*COOLANT PUMPS, SPECIFICATIONS), FLUID FLOW, OPERATION, FAILURE(ELECTRONICS), ELECTRIC MOTORS, MATERIALS, ACCEPTABILITY (U)

IDENTIFIERS: \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

Two Coolant Pump Assemblies were tested functionally by the Failure Analysis Laboratory in accordance with specifications. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 573 11/6 22/2 20/11

MCDONNELL CO ST LOUIS MO

Gemini B Blast Shield: Mechanical  
Properties of Aluminum Flexcore.

(U)

DESCRIPTIVE NOTE: Final rept.

AUG 68 19P

REPT. NO. 058-AKA.04

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ROCKET ENGINES, EXHAUST FLAMES), (\*MANNED SPACECRAFT, SHIELDING), (\*SPACE STATIONS, SHIELDING), (\*METAL PLATES, STRUCTURAL PROPERTIES), SPACE CAPSULES, SHEAR STRESSES, COMPOSITE MATERIALS, SANDWICH CONSTRUCTION, ALUMINUM ALLOYS, GLASS TEXTILES, REINFORCED PLASTICS (U)

IDENTIFIERS: ALUMINUM ALLOY 5056, ALUMINUM ALLOY 5052, (\*BLAST SHIELDS, GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

(U)

The Gemini B blast shield is a sandwich construction composed of glass fabric reinforced plastic skins adhesively bonded to aluminum Flexcore. The object of this test was to determine the plate shear strength and the flatwise bare compressive strength of aluminum flexcore as well as the effect of the Flexcore thickness on the plate shear strength. (Author) (U)

AD- 856 573

UNCLASSIFIED

PAGE

136

AD- 856 570

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 570 13/5 22/2

MCDONNELL CC ST LOUIS MO

Structural and Functional Test of the Gemini  
B Adapter Ground Coolant Supply Umbilical  
Disconnect.

(U)

DESCRIPTIVE NOTE: Final rept.

NOV 68 13P

REPT. NO. 058-ASA.03

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, GROUND SUPPORT EQUIPMENT), (\*SPACE STATIONS, GROUND SUPPORT EQUIPMENT), (\*UMBILICAL CORDS(AEROSPACE), \*DISCONNECT FITTINGS), SPACE CAPSULES, ADAPTERS, PERFORMANCE(ENGINEERING), COOLANTS, HOSES, SEPARATION, LOADS(FORCES) (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

(U)

A series of five tests was conducted to demonstrate the capability of the umbilical backup structure to withstand the loads imposed during separation of the coolant, helium, and oxygen lines, and to demonstrate the functional operation of the umbilical disconnect. The umbilical, which is similar to that used on NASA Gemini, is designed to disconnect by the rupture of four frangible unions. Because of changes from the NASA Gemini configuration in coolant hose lengths, lanyard, coolant hose 'pull off' angles, and the addition of hoses for the dual gas system, it was necessary to redesign the umbilical frangible unions for the Gemini B. Satisfactory separation was achieved during each of the five tests. A visual inspection of the umbilical backup structure after each test revealed no structural damage. (Author) (U)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 569 22/2 9/1

MCDONNELL CO ST LOUIS MO

EMI Test of Gemini B Limit Switches. (U)

DESCRIPTIVE NOTE: Final rept.,  
MAY 67 29P McDiv, R. P. ;  
REPT. NO. 058-AEG.01  
CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ELECTRIC SWITCHES),  
(\*SPACE STATIONS, ELECTRIC SWITCHES), (\*ELECTRIC  
SWITCHES, RELIABILITY(ELECTRONICS)), SPACE CAPSULES,  
OPERATION, SPECIFICATIONS, ELECTRICAL PROPERTIES,  
ELECTROMAGNETIC COMPATIBILITY (U)  
IDENTIFIERS: \*GEMINI B PROJECT, \*LIMIT SWITCHES,  
\*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The report presents the results of the conducted  
interference test performed on the Limit Switches  
used on Gemini B. This test was conducted in  
accordance with the required specifications.  
(Author) (U)

AD- 856 569

UNCLASSIFIED

PAGE

137

AD- 856 554

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 554 20/4 22/2

MCDONNELL DCUGLAS ASTRONAUTICS CO HUNTINGTON BEACH CALIF  
WESTERN DIV

MOL Rigid Body Fluctuating Pressure Test  
(1AL2). Volume II. Sequence Number  
B329. Data Item Number UT-134. (U)

DESCRIPTIVE NOTE: Fluid dynamics final test and analysis  
rept.,  
JAN 69 323P Emerson, T. S. ;  
REPT. NO. DAC-62611-Vol-2  
CONTRACT: F04695-67-C-0029

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-856  
743L.  
DESCRIPTORS: (\*MANNED SPACECRAFT, AERODYNAMIC LOADING),  
(\*SPACE STATIONS, AERODYNAMIC LOADING), (\*AIRFRAMES,  
TURBULENT BOUNDARY LAYER), SPACE CAPSULES, MODEL TESTS, (U)  
MACH NUMBER, PRESSURE, WIND TUNNEL MODELS  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES), \*PRESSURE LEVELS (U)

The report contains illustrated distributions of  
overall and octave band fluctuating pressure levels.  
(Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 553 19/1 22/2

MCDONNELL CO ST LOUIS MO

Development Test of Z100 FLSC Cutter  
Assembly with Dual Titanium Straps.

(U)

DESCRIPTIVE NOTE: Final rept.,

JUL 67 22P Farnsworth, Craig W. ;

REPT. NO. 058-AMA.07

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, SHAPED CHARGES),  
(\*SPACE STATIONS, SHAPED CHARGES), (\*SHAPED CHARGES,  
RELIABILITY), SPACE CAPSULES, SEPARATION, TITANIUM,  
FASTENERS, ELECTRIC CABLES, ALUMINUM, PIPES,  
ENVIRONMENTAL TESTS

(U)

IDENTIFIERS: GEMINI, GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES)

(U)

Five tests were performed to demonstrate that the  
existing flexible linear shaped charge cutter  
assembly that was qualified during the NASA Gemini  
program can adequately separate the Gemini B  
configuration of dual spacecraft to adapter titanium  
tension straps, wire bundle, and fluid filled  
aluminum tubes after exposure to environmental  
conditions. (Author)

(U)

AD- 856 553

UNCLASSIFIED

PAGE

138

AD- 856 551

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 551 13/1 22/2

MCDONNELL CO ST LOUIS MO

Separation Test of Simulated Gemini B  
Interface Heat Exchanger Coldplates.

(U)

DESCRIPTIVE NOTE: Final rept.

FEB 68 30P

REPT. NO. 058-ATC.05

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, HEAT EXCHANGERS),  
(\*SPACE STATIONS, HEAT EXCHANGERS), (\*METAL PLATES,  
SEPARATION), STAGING, SPACE CAPSULES, INTERFACES,  
GREASES, ADHESION, SIMULATION, ALUMINUM  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES)

(U)

(U)

The separation of the interface heat exchanger must  
coincide with the Gemini B/MOL separation.  
The heat transfer compound used between the two  
halves of the interface heat exchanger has exhibited  
significant cohesive properties. Therefore, the  
testing reported here was conducted to determine the  
tensile force required to separate two 112 square  
inch aluminum plates which simulated the interface  
heat exchanger mating surfaces. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 548 22/2 20/4

MCDONNELL DOUGLAS ASTRONAUTICS CO SANTA MONICA CALIF  
WESTERN DIV

MOL Fluid Dynamics Test Pretest Report:  
Test Line Item 1A35. MOL Flutter Test.  
LM Meteoroid Shield Half-Scale Model.  
Sequence Number B332. Data Item Number  
UT-135.

(U)

SEP 68 44P  
REPT. NO. DAC-59818  
CONTRACT: F04695-67-C-0029

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, FLUTTER), (\*SPACE STATIONS, FLUTTER), (\*SHIELDING, \*FLUTTER), SPACE CAPSULES, METEORITES, EXTENDABLE STRUCTURES, MODEL TESTS, SCALE, SUPERSONIC CHARACTERISTICS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The MOL Panel Flutter Model M207 is a 50% scale model of the Laboratory Module of the MDL Orbiting Vehicle. Basically the model consists of a sting supported thick walled hollow duct assembly which forms the base upon which the dynamically scaled meteoroid shield skin assembly and various protuberances are mounted. The purpose of the test is to determine whether the entire meteoroid shield of the MOL Laboratory vehicle is free of destructive flutter in the flight environment. (Author) (U)

AD- 856 548

UNCLASSIFIED

PAGE

139

AD- 856 546

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 546 22/2 20/4

DOUGLAS AIRCRAFT CO INC HUNTINGTON BEACH CALIF MISSILE  
AND SPACE SYSTEMS DIV

MOL Rigid Body Fluctuating Pressure Test  
(1A12). Volume I. Sequence Number  
B325. MOL Data Item UT-133.

(U)

DESCRIPTIVE NOTE: Final data rept..

68 111P Brown, J. J. ;

REPT. NO. DAC-60336

CONTRACT: F04695-67-C-0029

## UNCLASSIFIED/REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, AERODYNAMIC CHARACTERISTICS), (\*SPACE STATIONS, AERODYNAMIC CHARACTERISTICS), (\*TURBULENT BOUNDARY LAYER, PRESSURE), ANGLE OF ATTACK, CALIBRATION, REENTRY VEHICLES, SUBSONIC CHARACTERISTICS, SUPERSONIC CHARACTERISTICS, SPACE CAPSULES, PITCH(MOTION), YAW (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

A wind tunnel test was performed to measure the fluctuating pressures at the surface and around flow perturbing geometrics on a 10% model of the MOL Orbiting Vehicle. The model was tested at 15 mach numbers and various angles of attack. Detail descriptions of the model, test plan, test procedures, and calibrations are included. Some data analysis in the form of comparing disturbed flow and undisturbed flow regions, the impact on current environmental criteria, and extrapolation to full scale conditions are also included. (Author) (U)



## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 545 9/1 22/2

MCDONNELL CO ST LOUIS MO

Immersion Testing of Teflon Bundles. (U)

DESCRIPTIVE NOTE: Final rept.,

JAN 68 30P Laminand, J. B. ;

REPT. NO. 058-AED.05

CONTRACT: F04695-67-C-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ELECTRIC CABLES),  
 (\*SPACE STATIONS, ELECTRIC CABLES), (\*ELECTRIC CABLES,  
 MOISTUREPROOFING), HALOCARBON PLASTICS, SPACE CAPSULES,  
 LIQUID IMMERSION TESTS, DIELECTRIC PROPERTIES, (U)  
 ELECTRICAL RESISTANCE, ELECTRIC INSULATION (U)  
 IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
 ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
 LABORATORIES) (U)

The report presents the results of an altitude-  
 immersion test conducted to provide comparative data  
 on the capability of various Teflon insulated wire  
 bundles to withstand sea water immersion following  
 descent from a simulated orbital environment.  
 (Author) (U)

AD- 856 545

UNCLASSIFIED

PAGE

140

AD- 856 544

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 544 13/12 22/2

DOUGLAS AIRCRAFT CO INC HUNTINGTON BEACH CALIF MISSILE  
 AND SPACE SYSTEMS DIVMOL Zero G Development Test Report, DAC  
 Line Item 1AJ32, Sequence Number  
 B300. (U)

FEB 68 42P

REPT. NO. DAC-60150

CONTRACT: F04695-67-C-0029

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, SAFETY BELTS), (\*SPACE  
 STATIONS, SAFETY BELTS), (\*SAFETY BELTS,  
 \*WEIGHTLESSNESS), SPACE CAPSULES, DESIGN, CONFIGURATION,  
 MOTION, WASTES(SANITARY ENGINEERING), HYGIENE,  
 PERFORMANCE(HUMAN), MOBILITY, MODELS(SIMULATIONS),  
 PRESSURE SUITS (U)  
 IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
 ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
 LABORATORIES), \*RESTRAINT DEVICES (U)

The report outlines the procedures and results of  
 tests conducted on the intravehicular restraints and  
 locomotion equipment, impact panels, and Personal  
 Hygiene/Waste Management Assembly. The  
 tests were performed using crew stations mockups of  
 representative bays, and the Personal Hygiene/  
 Waste Management Assembly and under conditions  
 of zero gravity as simulated in the KC-135  
 aircraft. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 543 14/3 22/2

MCDONNELL CO ST LOUIS MO

Vibration Test of a 52-85713-339 Tape Recorder. Volume 1.

(U)

DESCRIPTIVE NOTE: Final rept.

AUG 68 99P

REPT. NO. 058-AVB-07-Vol-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-856 894.  
 DESCRIPTORS: (\*MANNED SPACECRAFT, MAGNETIC RECORDING SYSTEMS), (\*SPACE STATIONS, MAGNETIC RECORDING SYSTEMS), (\*MAGNETIC RECORDING SYSTEMS, VIBRATION), MAGNETIC TAPE, OPERATION, ENVIRONMENTAL TESTS, VIBRATION ISOLATORS, SPACE CAPSULES (U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

Vibration testing was conducted to determine the recording characteristics of the recorder when mounted with and without isolators and subjected to a vibration environment. The vibration test program was conducted in 5 phases. Test Phases 1, 3, 4, and 5 were conducted with the specimen mounted to the vibration fixture via vibration isolators and test Phase 2 was conducted with the specimen rigidly mounted to the vibration fixture. Low-level (2g peak) sine survey tests (with the tape recorder not operating) were conducted on the tape recorder during test Phase 3, and full-level (10.5g) random vibration tests (with the tape recorder operating) were conducted on the tape recorder during test Phases 1, 2, 4, and 5. (Author) (U)

AD- 856 543

UNCLASSIFIED

PAGE

141

AD- 856 542

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 542 6/17 22/2

DOUGLAS AIRCRAFT CO INC HUNTINGTON BEACH CALIF MISSILE AND SPACE SYSTEMS DIV

MOL Zero G Development Test Report. DD Form 1423 Data Item UT-(110).

(U)

APR 67 23P

CONTRACT: F04695-67-C-0029

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, WEIGHTLESSNESS), (\*SPACE STATIONS, WEIGHTLESSNESS), (\*PRESSURE SUITS, SPACE CREWS), SPACE CAPSULES, SAFETY BELTS, MODEL TESTS, TEST METHODS, PERFORMANCE(HUMAN), HELMETS, SHOES, GLO IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The report describes the Pressure Suit Donning Tests performed by the Crew Stations unassisted in a mock-up of the MOL suit storage area during zero gravity conditions. The object of these tests was to determine the suitability of the space allotted for suit donning under actual zero-g conditions and to evaluate various proposed restraints for suit, helmet, gloves, and boots. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 541 9/5 22/2 22/4

MCDONNELL CO ST LOUIS MO

G. B. Q. Antenna Tests.

DESCRIPTIVE NOTE: Final rept.

AUG 68 92P

REPT. NO. 058-ADA.04-Rev-A

CONTRACT: F04695-67-C-0023

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, SATELLITE ANTENNAS),  
(\*SPACE STATIONS, SATELLITE ANTENNAS), (\*SATELLITE  
ANTENNAS, ANTENNA RADIATION PATTERNS), SPACE CAPSULES,  
CALIBRATION, RECORDING PAPER (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The report contains reproductions of recorder  
charts depicting the relative power, in decibels, of  
spacecraft antenna radiation patterns. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 540 19/1 22/2

MCDONNELL CO ST LOUIS MO

Performance Comparison of Gemini B Z191

MDF Explosive (DIPAM) to NASA Gemini Z191

MDF Explosive (RDX).

DESCRIPTIVE NOTE: Final rept.

JUL 68 11P

REPT. NO. 053-AMA.13

CONTRACT: F04695-67-C-0023

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, EXPLOSIVE ACTUATORS),  
(\*SPACE STATIONS, EXPLOSIVE ACTUATORS), (\*EXPLOSIVE  
ACTUATORS, ENERGY), SPACE CAPSULES, CONTROL SYSTEMS,  
REENTRY VEHICLES, FUZES(CORDNANCE), SILVER, LEAD(METAL),  
EXPLOSIVES, TEST METHODS (U)  
IDENTIFIERS: DIPAM EXPLOSIVE, GEMINI, \*GEMINI B  
PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED  
ORBITING LABORATORIES) (U)

During the \*ASA Gemini program, lead sheathed  
RDX Mild Detonating Fuse (MDF) was utilized  
in the Z191 Severance System of the spacecraft.  
Silver sheathed DIPAM MDF is to be used in the  
Z191 Severance System of the Gemini B  
Spacecraft. The test program was conducted to  
correlate the output energy of silver sheathed DIPAM  
MDF with that of lead sheathed RDX MDF, and  
thereby ensure that the Gemini B Reentry  
Control System (RCS) structure will not sustain  
structural damage resulting from MDF detonation.  
(Author) (U)

AD- 856 541

UNCLASSIFIED

PAGE

142

AD- 856 540

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 538 22/2

MCDONNELL CO ST LOUIS MO

Gemini B Large Pressure Bulkhead Hatch  
Element Strength Verification Test.

(U)

DESCRIPTIVE NOTE: Final rept.

JUL 68 39P

REPT. NO. 058-ASB.04

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, HATCHES), (\*SPACE STATIONS, HATCHES), (\*HATCHES, SANDWICH CONSTRUCTION), SPACE CAPSULES, PRESSURIZED CABINS, HONEYCOMB CORES, GLASS TEXTILES, TITANIUM ALLOYS, BONDING, PERFORMANCE(ENGINEERING), ACCEPTABILITY, SHEAR STRESSES

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)

(U)

The object of the test was to determine if the bond strengths of the Gemini B large pressure bulkhead hatch meet the requirements of McDonnell drawing number 58A320014. The large pressure bulkhead hatch consists of a fiberglass honeycomb core sandwich with titanium faceplates. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 537 14/3 22/2

MCDONNELL CO ST LOUIS MO

Vibration Test of a 58A880025-1 Tape Recorder.

(U)

DESCRIPTIVE NOTE: Final rept.

JUL 68 41P

REPT. NO. 058-AHJ.01

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, MAGNETIC RECORDING SYSTEMS), (\*SPACE STATIONS, MAGNETIC RECORDING SYSTEMS), (\*MAGNETIC RECORDING SYSTEMS, VIBRATION), MAGNETIC TAPE, OPERATION, ANALOG SYSTEMS, POWER SPECTRA, ENVIRONMENTAL TESTS, SPACE CAPSULES

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)

(U)

Vibration testing was conducted to determine the operating characteristics of the tape recorder. The tape recorder was subjected to a 10.5 g random-vibration spectrum in the three test axes, with the tape recorder mounted to the vibration fixture. (Author)

(U)

AD- 856 538

UNCLASSIFIED

PAGE

143

AD- 856 537

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 536 22/2 22/4

DOUGLAS AIRCRAFT CO INC HUNTINGTON BEACH CALIF MISSILE AND SPACE SYSTEMS DIV

MOL Ground Test Plan: Effectiveness Test Plan. Sequence Number B288. Data Item Number UT-004.

APR 68 143P  
REPT. NO. DAC-57180  
CONTRACT: F04695-67-C-0029

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, SPACECRAFT COMPONENTS), (\*SPACE STATIONS, SPACECRAFT COMPONENTS), (\*SPACECRAFT COMPONENTS, ENVIRONMENTAL TESTS), SPACE CAPSULES, LIFE EXPECTANCY, MAINTAINABILITY, QUALITY CONTROL, EFFECTIVENESS, GROUND SUPPORT EQUIPMENT, STRESSES, LOADS(FORCES), MANAGEMENT PLANNING AND CONTROL

(U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, MANAGEMENT INFORMATION SYSTEMS, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)

(U)

This document defines the proposed Effectiveness Ground Test Program. This document is divided into three sections. Section 1 describes the scope and purpose of the document, provides definitions of terms, and the procedures, controls, and documentation to be utilized. Section 2 contains the effectiveness test narrative descriptions, and Section 3 is the MOL Test Summary. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 533 9/1 13/12 22/2

MCDONNELL CC ST LOUIS MO

Current Rating of 24 Gauge High Strength Alloy Wire.

DESCRIPTIVE NOTE: Final rept.

JUN 68 20P

REPT. NO. G58-AED.04

CONTRACT: F04695-67-C-0023

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

DESCRIPTORS: (\*SPACE STATIONS, FIRE SAFETY), (\*MANNED SPACECRAFT, FIRE SAFETY), (\*ELECTRIC WIRE, ELECTRICAL PROPERTIES), SPACE CAPSULES, THERMAL STABILITY, VACUUM APPARATUS, ELECTRICAL RESISTANCE, TEMPERATURE, THERMOCOUPLES, VINYL PLASTICS, HALOCARBON PLASTICS, FLUORINE COMPOUNDS

(U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, LOADING(ELECTRICAL), \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES), POLYIMIDE RESINS, VINYLIDENE FLUORIDE POLYMERS

(U)

Tests were conducted to determine the time for insulated wires, when subjected to a hard vacuum environment, to reach specified temperatures due to various levels of current. (Author)

(U)

AD- 856 536

UNCLASSIFIED

PAGE

144

AD- 856 533

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 529 9/1 22/2

MCDONNELL CO ST LOUIS MO

Small Gage Wire Overload Protection  
Evaluation.

(U)

DESCRIPTIVE NOTE: Final rept.

JUL 68 8P

REPT. NO. 058-AEM.01

CONTRACT: F04695-67-C-0023

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ELECTRIC WIRE),  
(\*SPACE STATIONS, ELECTRIC WIRE), (\*ELECTRIC WIRE,  
FAILURE(ELECTRONICS)), (\*CIRCUIT BREAKERS,  
PERFORMANCE(ENGINEERING)), (\*SPACE CAPSULES, PROTECTION,  
HALOCARBON PLASTICS, ELECTRIC CURRENTS, VOLTAGE,  
ELECTRIC INSULATION, TEMPERATURE, DISCOLORATION,  
ELONGATION, FLAMMABILITY, TEST METHODS,  
RELIABILITY(ELECTRONICS))

(U)

IDENTIFIERS: EVALUATION, GEMINI, \*GEMINI B PROJECT,  
\*MANNED ORBITING LABORATORIES \*MOL(MANNED ORBITING  
LABORATORIES), SMALL GAGE WIRE

(U)

Results are presented for a series of load tests  
conducted to determine the degree of protection  
afforded 26-gage Teflon wire when protected by a  
52-79721-422 Circuit Breaker. Circuit breaker  
timeouts were found to fall within the actuation band  
anticipated. (Author, modified-PL)

(U)

AD- 856 529

UNCLASSIFIED

PAGE

145

AD- 856 524

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 524 13/12 22/2

AEROSPACE CCRP EL SEGUNDO CALIF MOL SYSTEMS ENGINEERING  
OFFICEMOL Fire Safety Activities  
(Briefing).

(U)

DESCRIPTIVE NOTE: Status rept.

JUL 67 80P

REPT. NO. TOR-0158(3107-20)-2

CONTRACT: F04695-67-C-0158

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CONTROLLED  
ATMOSPHERES), (\*SPACE STATIONS, CONTROLLED ATMOSPHERES),  
(\*FIRE SAFETY, REVIEWS), SPACE CAPSULES, OXYGEN, SPACE  
CREWS, MATERIALS, FLAMMABILITY, FIRE EXTINGUISHERS,  
DOORS, FIRE ALARM SYSTEMS, AEROSPACE SYSTEMS, ESCAPE  
SYSTEMS

(U)

IDENTIFIERS: \*EMERGENCIES, \*ESCAPE SYSTEMS, GEMINI,  
\*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES,  
\*MOL(MANNED ORBITING LABORATORIES)

(U)

The briefing compares MOL Program design  
baseline, procedures, plans, etc. to the Apollo 204  
Review Board findings and recommendations.  
(Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 523 22/2 20/11

MCDONNELL DOUGLAS ASTRONAUTICS CO SANTA MONICA CALIF  
WESTERN DIVMOL Mass Properties Report 3.2: Verification  
Plan. Sequence Number B256. Data Item  
Number S-66.

JAN 69 37P

REPT. NO. DAC-62482

CONTRACT: F04695-67-C-0029

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, LOAD DISTRIBUTION),  
(\*SPACE STATIONS, LOAD DISTRIBUTION), (\*LOAD  
DISTRIBUTION, MEASUREMENT), WEIGHT, CENTER OF GRAVITY,  
SPECIFICATIONS, MEASURING INSTRUMENTS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORY, \*MOL(MANNED ORBITING  
LABORATORY) (U)

The purpose of the Mass Properties  
Verification Plan is to identify the critical  
mass properties and specify the verification methods  
to be used. The specification requirements current  
at the time of verification will be considered the  
MDCAC-WD standard. The Verification Plan  
defines the requirements and methods necessary to  
verify critical mass properties until the time of  
launch. The Operational Support plan will  
establish the field station and on-orbit verification  
plan. The weight of the LVSS and Laboratory  
Vehicle and center of gravity (CG) of the  
Laboratory Vehicle will be the primary  
measurements taken which, in turn, will be the basis  
for analytically determining the Orbiting Vehicle  
(OV) mass properties. (U)

AD- 856 523

UNCLASSIFIED

PAGE

146

AD- 856 522

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 522 13/12 22/2

AEROSPACE CCRP EL SEGUNDO CALIF MOL SYSTEMS ENGINEERING  
OFFICEOrbiting Vehicle Nonmetallic Materials  
Combustion and Atmospheric Contaminant  
Control Standard for the MOL Orbiting  
Laboratory Program. (U)

SEP 67 78P

REPT. NO. TOR-1001(2107-20)-1

CONTRACT: AF 04(695)-1001

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, FIRE SAFETY), (\*SPACE  
STATIONS, FIRE SAFETY), (\*NONMETALS, STANDARDS), SPACE  
CAPSULES, SPECIFICATIONS, AIR POLLUTION, FLAMMABILITY,  
TOXICITY, COMBUSTION PRODUCTS, FIRE RESISTANT MATERIALS,  
INDUSTRIAL PRODUCTION, PROCUREMENT, ACCEPTABILITY,  
CARBON MONOXIDE, ORGANIC COMPOUNDS, ODORS, CIRCUIT  
INTERCONNECTIONS, ELECTRIC INSULATION, COATINGS,  
EMBEDDING SUBSTANCES (U)

IDENTIFIERS: COMPONENTS, GEMINI, \*GEMINI B PROJECT,  
\*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

This specification delineates the conditions and  
requirements for use of non-metallic materials in the  
MOL Orbiting Vehicle with respect to the  
flammability and toxicity hazards. The objective  
is to provide a high degree of safety with due regard  
to practical limitations and mission objectives.  
The criteria, test methods, and controls described  
pertain only to the flammability and toxicity  
hazards. Functional and other materials  
requirements are not included. Requirements for  
control of materials are delineated. This  
specification does not include considerations for  
propellants and pyrotechnics. It should be noted  
that the requirements are specified in terms of the  
most severe environment in which the material is  
intended to be used. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 521 22/2 22/4

DOUGLAS AIRCRAFT CO INC HUNTINGTON BEACH CALIF MISSILE  
AND SPACE SYSTEMS DIVMOL Ground Test Plan: Development Test  
Plan. Sequence Number B285. MOL Data  
Item Number UT-101.

(U)

JUN 68 549P  
REPT. NO. DAC-57177  
CONTRACT: F04695-67-C-0029

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, SPACECRAFT  
COMPONENTS), (\*SPACE STATIONS, SPACECRAFT COMPONENTS),  
(\*SPACECRAFT COMPONENTS, ENVIRONMENTAL TESTS), SPACE  
CAPSULES, QUALITY CONTROL, DESIGN, EFFECTIVENESS, VALUE  
ENGINEERING, ACCEPTABILITY, GROUND SUPPORT EQUIPMENT,  
STRESSES, LOADS(FORCES), TEST METHODS, MANAGEMENT  
PLANNING AND CONTROL

IDENTIFIERS: EVALUATION, GEMINI, \*GEMINI B PROJECT,  
MANAGEMENT INFORMATION SYSTEMS, \*MANNED ORBITING  
LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES)

(U)

(U)

This document defines the Development Ground  
Test program. This document is organized in  
five sections. Section 1 describes the scope and  
purpose of the document, provides definitions of  
terms, and the procedures, controls, and  
documentation to be utilized. Sections 2 and 3 are  
(Part 1) development tests; Sections 4 and 5  
describe the nonmandatory (part 2) development  
tests. (Author)

(U)

AD- 856 521

UNCLASSIFIED

PAGE

147

AD- 856 517

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 517 22/2

AEROSPACE CCRP EL SEGUNDO CALIF MOL SYSTEMS ENGINEERING  
OFFICEStructural Specification Gemini B  
Spacecraft.

(U)

OCT 68 27P  
REPT. NO. TOR-0158(3107-15)-11-A  
CONTRACT: F04701-68-C-0200, F04695-67-C-0158

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supersedes Rept. no. TOR-  
0158(3107-15)-11 dated Jun 68.  
DESCRIPTORS: (\*MANNED SPACECRAFT, STRUCTURAL  
PROPERTIES), (\*SPACE STATIONS, STRUCTURAL PROPERTIES),  
SPECIFICATIONS, STRENGTH(PHYSIOLOGY), SAFETY, REENTRY  
VEHICLES

(U)

IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES)

(U)

This document presents the basic requirements  
governing the structural design for the Gemini B  
Spacecraft of the Manned Orbiting Laboratory  
System (MOL). Included herein are the  
following: Definitions, abbreviations, and  
references; Structural design philosophy; General  
conditions and environments for which the spacecraft  
structure must be evaluated and/or designed; and  
Requirements for establishing loads and other  
environmental factors for the structural design  
conditions. (Author)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 516 22/2

AEROSPACE CORP EL SEGUNDO CALIF MOL SYSTEMS ENGINEERING OFFICE

Electromagnetic Compatibility Requirements MOL Systems Orbiting Vehicle. (U)

JUN 68 115P Balduw.W. J. ;  
 REPT. NO. TOR-0200(4107-28)-2  
 CONTRACT: F04701-68-C-0200

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, ELECTROMAGNETIC COMPATIBILITY), (\*SPACE STATIONS, ELECTROMAGNETIC COMPATIBILITY), SPACE CAPSULES, SPECIFICATIONS, DESIGN, QUALITY CONTROL, SAFETY, TOLERANCES(MECHANICS) (U)  
 IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

This specification provides the requirements of an electromagnetic compatibility (EMC) control program for each manned spacecraft composite system procured by the Manned Orbiting Laboratory Systems Program Office (MOL SPO). The EMC control program for each such system shall be used by MOL SPO to establish and maintain 'engineered-in' EMC control from issuance of contractual go-ahead of the program definition phase through the life of the affected system so that the confidence level and degree of probability of system performance in its operational environment will be before the fact. (Author) (U)

AD- 856 516

UNCLASSIFIED

PAGE

148

AD- 856 515

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 515 22/2

DOUGLAS AIRCRAFT CO INC HUNTINGTON BEACH CALIF MISSILE AND SPACE SYSTEMS DIV

MOL Fluid Dynamics Test Pretest Report.  
 MOL Protuberance Heating Wind Tunnel Model.  
 Sequence Number 8334. Data Item Number  
 UT-135. (U)

FEB 63 54P  
 REPT. NO. DAC-58780  
 CONTRACT: F04695-67-C-0029

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, EXTENDABLE STRUCTURES), (\*SPACE STATIONS, EXTENDABLE STRUCTURES), (\*EXTENDABLE STRUCTURES, HEAT TRANSFER), SPACE CAPSULES, AERODYNAMIC HEATING, WIND TUNNEL MODELS, MODEL TESTS, BOUNDARY LAYER, SUPERSONIC CHARACTERISTICS (U)  
 IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED ORBITING LABORATORIES, \*MOL(MANNED ORBITING LABORATORIES) (U)

The report outlines objectives and test requirements for wind tunnel testing of several protuberances unique to the MOL vehicle. An important feature of the testing program is the investigation of heating rates on protuberances wholly or partially submerged in a boundary layer. In order to achieve a thick boundary layer, the models are mounted on the floor of the tunnel. A thin, instrumented plate replaces the ordinary tunnel floor plates, in order to investigate the disturbances caused by the protuberances on the surrounding flow fields. A wake heating region of at least 35 inches will be available. The protuberance models and the metric floor plate are constructed of thin nickel shells 1/16 inch thick. Heat transfer data will be collected by applying thin skin temperature response techniques. The models will be tested at Mach numbers of 2.5, 3.0, 3.5, 4.0, 4.5, and 5.0 and unit Reynolds number will be varied to the limits of the tunnel and structural limits of the models. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 513 20/4 22/2

DOUGLAS AIRCRAFT CO INC HUNTINGTON BEACH CALIF MISSILE  
AND SPACE SYSTEMS DIV

MOL Rigid Body Fluctuating Pressure Test  
(1AL2). Sequence Number 8333. Data  
Item UT-135. (U)

DESCRIPTIVE NOTE: Pretest rept.,  
JUL 67 79P Brown, J. J. ;  
REPT. NO. DAC-60199  
CONTRACT: F04695-67-C-0029

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-856 554.  
DESCRIPTORS: (\*MANNED SPACECRAFT, AERODYNAMIC LOADING),  
(\*SPACE STATIONS, AERODYNAMIC LOADING), (\*AIRFRAMES,  
TURBULENT BOUNDARY LAYER), SPACE CAPSULES, AERODYNAMIC  
CHARACTERISTICS, PRESSURE, WIND TUNNEL MODELS, MODEL  
TESTS, VIBRATION, FATIGUE(MECHANICS), TRANSDUCERS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES), \*PRESSURE LEVELS (U)

The test provides data which will be used to  
determine the characteristics of the fluctuating  
pressures acting at the surfaces of the Gemini B/  
MOL. The pressure characteristics so determined,  
will be utilized to (1) perform structural  
response studies leading to structural loads  
verification and fatigue life predictions, and  
(2) assess and establish environmental vibration  
criteria. The test specimen is a 'rigid' 3-  
dimensional 10 percent scaled model of the orbiting  
vehicle. The test environment consists of  
simulating the flight parameters within the  
limitations of the selected wind tunnels.  
(Author) ~ (U)

AD- 856 513

UNCLASSIFIED

PAGE

149

AD- 856 512

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 512 22/2

AEROSPACE CORP EL SEGUNDO CALIF MOL SYSTEMS ENGINEERING  
OFFICE

Environmental and Test Requirements Gemini  
B Spacecraft. (U)

OCT 68 131P  
REPT. NO. T06-0158(3107-15)-10-A  
CONTRACT: F04701-68-C-0200, F04695-67-C-0158

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supersedes report dated Jun 68.  
DESCRIPTORS: (\*MANNED SPACECRAFT, ENVIRONMENTAL TESTS),  
(\*SPACE STATIONS, ENVIRONMENTAL TESTS), SPACE CAPSULES,  
SPECIFICATIONS, TOLERANCES(MECHANICS), TEMPERATURE, TEST  
METHODS, CONTROLLED ATMOSPHERES, TEST EQUIPMENT (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJECT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

IAC ACCESSION NUMBER: MCIC-006637  
IAC DOCUMENT TYPE: MCIC -HARD COPY--  
The specification contains the environmental and  
test requirements for the Gemini B Spacecraft  
for the United States Air Force Manned  
Orbiting Laboratory (MOL) Program. The  
document is compatible with the general environmental  
criteria for the MOL System and defines the  
environmental conditions for the spacecraft and  
spacecraft components during all mission phases.  
(Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 511 9/2 22/2

DOUGLAS AIRCRAFT CO INC HUNTINGTON BEACH CALIF MISSILE  
AND SPACE SYSTEMS DIV

MOL Item Test Plan (Computer Programs).  
Computer Program, Compiler, Manned Orbiting  
Laboratory, Test Oriented Language.  
Sequence Number 8294. (U)

JAN 67 11P  
REPT. NO. DAC-60066  
CONTRACT: F04695-67-C-0029

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, TEST METHODS), (\*SPACE  
STATIONS, TEST METHODS), (\*COMPILERS, TEST METHODS),  
COMPUTER PROGRAMMING, MULTIPLE OPERATION, (U)  
SPECIFICATIONS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJEKT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES), MULTIPROGRAMMING (U)

The plan establishes the detailed requirements,  
criteria, general methods, responsibilities, and  
overall planning (in accordance with Section 4 of  
the Part I Specification for the MOLTOL  
Compiler, CEI 207270A), to confirm that CEI  
207270A fulfills the requirements of Section 3 of  
the Part I Specification, No. CG00488. (U)

AD- 856 511

UNCLASSIFIED

PAGE

150

AD- 856 509

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 856 509 9/2 22/2

DOUGLAS AIRCRAFT CO INC HUNTINGTON BEACH CALIF MISSILE  
AND SPACE SYSTEMS DIV

MOL Item Test Plan (Computer Programs).  
Computer Program, Operational, All Systems  
Test Equipment Group, Sequence Number  
B295. Data Item Number UT-109. (U)

FEB 67 12P  
REPT. NO. DAC-60065  
CONTRACT: F03695-67-C-0029

UNCLASSIFIED REPORT

DESCRIPTORS: (\*MANNED SPACECRAFT, CHECKOUT PROCEDURES),  
(\*SPACE STATIONS, CHECKOUT PROCEDURES), (\*CHECKOUT  
PROCEDURES, \*COMPUTER PROGRAMMING), SPACE CAPSULES, DATA  
TRANSMISSION SYSTEMS, INPUT OUTPUT DEVICES, MULTIPLE  
OPERATION, TEST METHODS, SPECIFICATIONS (U)  
IDENTIFIERS: GEMINI, \*GEMINI B PROJEKT, \*MANNED  
ORBITING LABORATORIES, \*MOL(MANNED ORBITING  
LABORATORIES) (U)

The document presents that plan which establishes  
the detailed requirements, criteria, general methods,  
responsibilities, and overall planning to confirm  
that the operational system program fulfills the  
requirements of Section 3 of the Part I  
Specification. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMQ7

AD- 850 512 22/2 11/4

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Simulated Meteoroid Impact Testing on a Composite Expandable Structure for Spacecraft Airlock Application. (U)

DESCRIPTIVE NOTE: Final rept. 1 Dec 67-29 Aug 68, APR 69 29P Carden, William H. ;  
 REPT. NO. AEOC-TR-69-14  
 CONTRACT: F40600-69-C-0001  
 PROJ: AF-8170, ARO-V50847  
 TASK: 817034

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO, Inc., Tullahoma, Tenn.  
 DESCRIPTORS: (\*MANNED SPACECRAFT, EXPANDABLE STRUCTURES), (\*SPACE STATIONS, METEORITES), HAZARDS, VULNERABILITY, PENETRATION, SIMULATION, COMPOSITE MATERIALS, SABOT PROJECTILES, TERMINAL BALLISTICS, IMPACT, COMBUSTION (U)  
 IDENTIFIERS: AIRLOCKS, APOLLO, METEORIDS, SPACE HAZARDS (U)

Simulated meteoroid impact tests were conducted on an expandable, elastic recovery, four-layer composite material proposed for flight testing in a dummy airlock configuration aboard a NASA S-IVB Orbital Workshop. The tests were conducted to obtain the ballistic limit of the structure and to determine its behavior during simulated meteoroid perforation while enclosing a typical oxygen-rich spacecraft atmosphere. Spherical aluminum projectiles at a velocity of about 20,000 ft/sec were used on the tests, and perforation occurred for projectile masses greater than about 0.004 gm. The resistance of the structure to perforation was not affected by the presence of oxygen at 5 psia behind the test sample except under certain conditions in which the structure was compressed by the gas pressure together with the clamping arrangement used to fasten the sample to the test tank.

(U)

AD- 850 512

UNCLASSIFIED

PAGE

151

AD- 848 174

UNCLASSIFIED

ZOMQ7

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMQ7

AD- 848 174 20/4 22/2

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Flutter Test of a 0.50-Scale MDL Meteoroid Shield Panel at Mach Numbers from 1.2 to 2.5. (U)

DESCRIPTIVE NOTE: Final rept. 31 Oct-11 Dec 68, FEB 69 40P Riddle, C. D. ;  
 REPT. NO. AEOC-TR-69-41  
 CONTRACT: F40600-69-C-0001  
 PROJ: ARO-PT0767

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO, Inc., Tullahoma, Tenn.  
 DESCRIPTORS: (\*SPACE STATIONS, FLUTTER), (\*AIRCRAFT PROTRUBANCES, CYLINDRICAL BODIES), AIRPLANE PANELS, WIND TUNNEL MODELS, MODEL TESTS, AERODYNAMIC LOADING, AERODYNAMIC HEATING, PRESSURE, SURFACES, BOUNDARY LAYER, TURBULENCE, SUPERSONIC CHARACTERISTICS, TRANSONIC CHARACTERISTICS, MANNED SPACECRAFT, METEORS, SHIELDING (U)  
 IDENTIFIERS: MANNED ORBITAL LABORATORY, METEOROID SHIELDS, SKIN (STRUCTURAL MEMBER) (U)

A 0.50-scale model of the meteoroid shield portion of the MDL laboratory vehicle was tested in Tunnels 16T and 16S of the Propulsion Wind Tunnel Facility. The model consisted of a sting-supported hollow duct assembly about which the dynamically scaled meteoroid shield skin and various protubances were mounted. The test objective was to determine if the shield was free of destructive flutter in the flight dynamic pressure environment. Principal shield data included measurements of strain, displacement, temperature, noise level, surface pressure, and boundary-layer profile. Data were recorded at nominal Mach numbers from 1.25 to 1.50 in Tunnel 16T and from 1.70 to 2.25 in Tunnel 16S. Dynamic pressure was varied from tunnel minimums to levels that exceeded the scaled flight value. No indications of flutter were observed. (Author)

(U)

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 847 482 22/2 9/2 15/5

LTV AEROSPACE CORP DALLAS TEX MISSILES AND SPACE DIV

Extravehicular Activities System  
Effectiveness. Volume III Phase II  
Effectiveness Computer Model.

(U)

DESCRIPTIVE NOTE: Final rept. 17 Apr 68-27 Jan 69,  
JAN 69 141P Nicks, Robert F. ;Gregory,

Lowell D. ;Dyer, Ray E. ;

REPT. NO. MSD/ES-2601-Vol-3, MSD-00.1115-Vol-3

CONTRACT: F33615-67-C-1499

PROJ: AF-8170

TASK: 817012

MONITOR: AFAPL TR-68-135-Vol-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-847 481.

DESCRIPTORS: (\*SPACE FLIGHT, LOGISTICS), (\*SPACE  
STATIONS, EXTRAVEHICULAR ACTIVITY), (\*SPACE  
PLANNING, MANNED SPACECRAFT, SATELLITE ANTENNAS,  
ANTENNAS, SYSTEMS ENGINEERING, SATELLITE ANTENNAS,  
LIFE SUPPORT, MATHEMATICAL MODELS, COMPUTER PROGRAMS,  
FLOW CHARTING, SUBROUTINES, COST EFFECTIVENESS

IDENTIFIERS: AOL(ADVANCED ORBITAL LABORATORIES), (U)

COMPUTERIZED SIMULATION, \*MANAGEMENT INFORMATION  
SYSTEMS, \*MANNED ORBITAL LABORATORIES, TITAN 3

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 847 481 22/2 15/5

LTV AEROSPACE CORP DALLAS TEX MISSILES AND SPACE DIV

Extravehicular Activities System  
Effectiveness. Volume I Phase II Summary  
Report.

(U)

DESCRIPTIVE NOTE: Final rept. 17 Apr 68-27 Jan 69,  
JAN 69 92P Nicks, Robert F. ;

REPT. NO. MSC/ES-2601-Vol-1, MSD-00.1115-Vol-1

CONTRACT: F33615-67-C-1499

PROJ: AF-8170

TASK: 817012

MONITOR: AFAPL TR-68-135-Vol-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-395  
368L.

DESCRIPTORS: (\*SPACE FLIGHT, LOGISTICS), (\*SPACE  
STATIONS, EXTRAVEHICULAR ACTIVITY), SYSTEMS ENGINEERING,  
TELESCOPES, SATELLITE ANTENNAS, ANTENNAS, MANNED  
SPACECRAFT, LIFTING REENTRY VEHICLES, DESIGN,  
PERFORMANCE(HUMAN), VALUE ENGINEERING, OPTICAL EQUIPMENT  
COMPONENTS, COST EFFECTIVENESS, PLANNING

IDENTIFIERS: AOL(ADVANCED ORBITAL LABORATORIES), (U)

\*MANAGEMENT INFORMATION SYSTEMS, \*MANNED ORBITAL  
LABORATORIES, TITAN 3

(U)

AD- 847 482

UNCLASSIFIED

PAGE

152

AD- 847 481

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 815 716 22/2

GOODYEAR AEROSPACE CORP AKRON OHIO

PRE-PHASE I FOR DESIGN, FABRICATION, AND ORBITAL  
TESTING OF A SPACE STRUCTURE. (U)

DESCRIPTIVE NOTE: Final rept. Jan-Oct 66,  
JAN 67 368p Hoffman, Thomas L. ;  
REPT. NO. GER-12849  
CONTRACT: AF 33(615)-3403  
PROJ: AF-8170  
TASK: 817004  
MONITOR: AFAPL TR-66-145

UNCLASSIFIED REPORT

DESCRIPTORS: (\*EXPANDABLE STRUCTURES, \*SPACE STATIONS),  
HONEYCOMB CORES, SANDWICH CONSTRUCTION, PRESSURIZED  
CABINS, MATERIALS, WEIGHT, ELASTIC PROPERTIES,  
GRAVITY(ARTIFICIAL), EXTRAVEHICULAR ACTIVITY, SPACECRAFT  
DOCKING, LAUNCH VEHICLES, RINGS, AIRFRAMES, SPACECRAFT  
COMPONENTS, FEASIBILITY STUDIES, HATCHES, SPACE CREWS,  
STABILIZED PLATFORMS, ENERGY MANAGEMENT, (U)  
SPINNING(MOTION), ACCELERATION (U)  
IDENTIFIERS: ROTATION, VELOCITY, APOLLO, SPACECRAFT (U)  
RESEARCH, TITAN 3

This report summarizes the preliminary design and analysis performed by GAC on a large expandable toroidal space structure for orbital testing. The program established preliminary designs, supported by analysis, of two fractional torus concepts, a 138-ft diam elastic recovery materials configuration and a 118-ft diam expandable honeycomb materials configuration. The fractional torus designs comprise 3 identical symmetrically located 8.5-ft diam modules connected together by 3 symmetrically located 4.5-ft diam access tunnels. The torus modules are connected by 5.5-ft diam spokes to a 10-ft diam cylindrical central hub of aluminum honeycomb sandwich construction, which has its 20-ft length perpendicular to the plane of the torus. The expandable components (spokes, modules, and access tunnels) are attached to each other and to the rigid hub with aluminum termination assemblies that provide dual aluminum hatches to compartmentize the structure in the event of depressurization of any component. (U)

AD- 815 716

UNCLASSIFIED

PAGE

153

AD- 785 123

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 785 123 22/2 9/2

TRW SYSTEMS GROUP REDONCO BEACH CALIF

Department of Defense Space Shuttle on-  
Board Software Requirements. (U)

DESCRIPTIVE NOTE: Technical Operating rept. Mar-Jul  
74, JUL 74 440p Unfrig, D. B. ;  
REPT. NO. TRW-25475-6006-TU-00  
CONTRACT: F04701-74-C-0316  
MONITOR: SAM30 TR-74-155

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:  
DESCRIPTORS: \*Space shuttles, \*Computer programming,  
\*Data processing, Memory devices, Guidance  
computers, Navigation computers, Flight control  
systems, Systems engineering, Interfaces,  
Requirements (U)

This document presents a baseline set of DOD Space Shuttle On-Board Software Requirements prepared under the direction of the Space and Missile Systems Organization (AFSC). These requirements are concerned with the DOD operational use of the space shuttle and pertain to that portion of the software which resides in the orbiter's on-board general purpose computers (five IBM AP-101's) and their two associated mass memories. Emphasis is placed on the payload management and payload handling functions because these functional areas are of particular importance to DOD as an operational user of the space shuttle. Other functions addressed are guidance, navigation, flight control, systems management, displays and controls, flight computer operating system, system interfaces, and mission planning. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 779 915 21/9.1 22/2

TRW SYSTEMS GROUP REDONDO BEACH CALIF

Development of a Zero-G Gauging System.  
Volume I.

(U)

DESCRIPTIVE NOTE: Final rept. 16 Jun 72-20 Dec 73,

JAN 74 244P

Bupp, Frank E. ;

REPT. NO. 16740-6003RU-00

CONTRACT: F04611-71-C-0010

PROJ: AF-3058

MONITOR: AFRPL TR-74-5

UNCLASSIFIED REPORT

DESCRIPTORS: \*Space shuttles, \*Liquid rocket  
propellants, \*Weightlessness, \*Liquid level gages,  
Gamma rays, Detectors, Propellant tanks,  
Propellant control, Reliability(Electronics)

(U)

Nucleonic techniques using continual gamma-ray  
emission phenomena were extensively analyzed in the  
application of gauging (storable) propellants in  
the Space Shuttle Vehicle Orbital  
Maneuvering System (OMS) tanks when under zero-  
gravity conditions. Parametric analyses were used  
to identify viable gauging concepts which were, in  
turn, subjected to subsystem and engineering  
tradeoffs. Based on these tradeoffs, a flight-type  
nucleonic gauging system was designed, fabricated and  
tested. (Modified author abstract)

(U)

AD- 779 915

UNCLASSIFIED

PAGE

154

AD- 778 445

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 778 445 22/3 1/1 16/2

DOUGLAS AIRCRAFT CO LONG BEACH CALIF

The Mark IV Supersonic-Hypersonic  
Arbitrary-Body Program. Volume III.  
Program Listings.

(U)

DESCRIPTIVE NOTE: Final rept.,

NOV 73 579P

Douglas N. ; Oliver, Wayne R. ;

CONTRACT: F33615-72-C-1675

MONITOR: AFFDL TR-73-159-Vol-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-778 444.  
DESCRIPTORS: \*Hypersonic vehicles, \*Supersonic  
aircraft, \*Space shuttles, FORTRAN, Aerodynamic  
characteristics, Flow fields, Supersonic flow,  
Hypersonic flow, Aerodynamic forces, Digital  
simulation

(U)

The volume contains the source language listings of  
the Mark IV Supersonic-Hypersonic  
Arbitrary-Body Program (Mod 0 Version).  
The program as shown in this listing will operate  
on CDC 6500, 6600, and CYBER 74 computers.  
With a small converter program, the Mark IV  
program can be converted for operation on IBM 360  
and 370 types of computers. This converter program  
is included with the listings.

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 778 444 22/3 1/1 16/2

DOUGLAS AIRCRAFT CO LONG BEACH CALIF

The Mark IV Supersonic-Hypersonic  
Arbitrary-Body Program. Volume II.  
Program Formulation.

(U)

DESCRIPTIVE NOTE: Final rept..

NOV 73 228P Gentry, Arvel E. ; Smyth,

Douglas N. ; Oliver, Wayne R. ;

CONTRACT: F33615-72-C-1675

MONITOR: AFFDL TR-73-159-Vol-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 1, AD-778 443 and  
Volume 3, AD-778 445.

DESCRIPTORS: \*Hypersonic vehicles. \*Supersonic  
aircraft. \*Space shuttles. FORTRAN. Aerodynamic  
characteristics. Flow fields. Supersonic flow.  
Hypersonic flow. Aerodynamic forces. Digital  
simulation

(U)

The report contains descriptions of the analysis  
techniques used within the program. Throughout  
these discussions an attempt has been made to  
maintain mathematical notations consistent with the  
appropriate reference involved. This will assist  
the reader in comparing the approaches with the  
original reference material at some slight loss in  
continuity within the present report. This policy  
has also been used in the selection of many of the  
program variable names.

(U)

AD- 778 444

UNCLASSIFIED

PAGE

155

AD- 778 443

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 778 443 22/3 1/1 16/2

DOUGLAS AIRCRAFT CO LONG BEACH CALIF

The Mark IV Supersonic-Hypersonic  
Arbitrary-Body Program. Volume I. User's  
Manual.

(U)

DESCRIPTIVE NOTE: Final rept..

NOV 73 269P Gentry, Arvel E. ; Smyth,

Douglas N. ; Oliver, Wayne R. ;

CONTRACT: F33615-72-C-1675

MONITOR: AFFDL TR-73-159-Vol-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 2, AD-778 444.

DESCRIPTORS: \*Hypersonic vehicles. \*Supersonic  
aircraft. \*Space shuttles. FORTRAN. Aerodynamic  
characteristics. Flow fields. Supersonic flow.  
Hypersonic flow. Aerodynamic forces. Digital  
simulation

(U)

The report describes a digital computer program  
system that is capable of calculating the supersonic  
and hypersonic aerodynamic characteristics of complex  
arbitrary three-dimensional shapes. This program  
is identified as the Mark IV Supersonic-  
Hypersonic Arbitrary-Body Computer Program.  
This program is a complete reorganization and  
expansion of the old Mark III Hypersonic  
Arbitrary-Body Program. The Mark IV  
program has a number of new capabilities that extend  
its applicability down into the supersonic speed  
range. (Modified author abstract)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 773 160 22/2 1/3

NATIONAL RESEARCH COUNCIL OF CANADA OTTAWA (ONTARIO)

Dynamic Stability Testing of Aircraft -  
Needs Versus Capabilities, (U)

73 17P Orlik-Rueckemann, K. J. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*Aerospace craft, Canada, Dynamics,  
Stability, Angle of attack, Wind tunnel models,  
Variable sweep wings, Short takeoff aircraft,  
Space shuttles (U)

The report presents highlights of a recent survey of the future needs for dynamic stability information for such aerospace vehicles as the space shuttle and advanced high performance military aircraft, indicating the importance of obtaining this information for high-angle-of-attack high-Reynolds-number conditions. A review of the wind-tunnel capabilities in North America for measuring dynamic stability derivatives, reveals an almost total lack of such capabilities for Mach numbers above 0.1 at angles of attack higher than 25 degrees. In addition, capabilities to obtain certain new cross-coupling derivatives and information on effects of the coning motion are almost completely lacking. (Modified author abstract) (U)

AD- 773 160

UNCLASSIFIED

PAGE

156

AD- 772 888

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 772 888 22/3

NATIONAL AERONAUTICAL ESTABLISHMENT OTTAWA (ONTARIO)

Example of Dynamic Interference Effects  
between Two Oscillating Vehicles, (U)

MAY 73 4P Orlik-Rueckemann, K. J. ;  
Iyengar, S. ;

UNCLASSIFIED REPORT

Availability: Pub. in Jnl. of Spacecraft and  
Rockets, Vol. 9, p617-619 Sep 73.  
SUPPLEMENTARY NOTE: Presented at the AIAA Atmospheric  
Flight Mechanics Conference (2nd) Held at Palo  
Alto, Calif., 11-13 Sep 72. Revision of report dated  
4 Apr 73.

DESCRIPTORS: \*Space shuttles, \*Booster rockets,  
\*Separation, \*Interference, Dynamic tests,  
Oscillation, Abort, Mathematical models,  
Experimental data, Orbits, Vehicles, Canada  
IDENTIFIERS: \*Abort separation maneuvers (U)  
(U)

The principal message of this paper is that the  
mutual static interference between two vehicles  
flying in the proximity of each other may cause their  
instantaneous frequencies to become nearly the same,  
and that whenever this happens (even if only for a  
short time) a strong and hitherto unaccounted-for  
dynamic interference may occur which could alter the  
subsequent flight history of one or both of the  
companion vehicles. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 772 687 22/2 22/3

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Heat-Transfer Tests of Two Space Shuttle Orbiter Configurations at Mach Number 8. (U)

DESCRIPTIVE NOTE: Final rept. 25 Aug-28 Sep 72.  
JAN 74 44P Martindale, W. R.;  
REPT. NO. AEDC-TR-73-59  
PROJ: AF-921E-1, ARO-VA024

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO, Inc., Tullahoma, Tenn. Rept. no. ARO-VKF-TR-72-198.

DESCRIPTORS: \*Space shuttles, \*Aerodynamic heating, Manned spacecraft, Heat transfer, Atmosphere entry, Boundary layer transition, Flow visualization, Wind tunnel models (U)

Heat transfer tests were conducted on two Space Shuttle configurations at Mach number 8 to investigate the effects of nose geometry on windward and leeward heating and boundary layer transition. Free-stream Reynolds number based on model length was varied from 1.5 to 7.5 million at angles of attack from 20 to 50 deg. Windward centerline heating rates were in general agreement with calculated values except for laminar rates downstream of the wing/body junction. Differences in the location of the beginning of transition and the length of the transition zone were observed for the two configurations, but it was not clear whether variation in nose shape per se or the abrupt cross-sectional change from the nose to the aft fuselage and wing was the controlling factor. (Author) (U)

AD- 772 687

UNCLASSIFIED

PAGE

157

AD- 767 900

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 767 900 20/4

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Wall Temperature Effects on Two- and Three-Dimensional Transonic Turbulent Boundary Layers. (U)

DESCRIPTIVE NOTE: Final rept. Dec 72-Jul 73.  
OCT 73 71P Adams, J. C., Jr.; Wayne, A. W., Jr;  
REPT. NO. AEDC-TR-73-156  
PROJ: ARO-V0205, ARO-VF405

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO, Inc., Tullahoma, Tenn. Rept. no. ARO-VKF-TR-73-100.

DESCRIPTORS: \*Turbulent secondary layer, \*Wind tunnel models, Reynolds number, Transonic characteristics, Subsonic characteristics, Aerospace craft, Atmosphere entry, Temperature, Transonic airfoils, Computer programming, Flight, Recoverable booster motors, Rendezvous spacecraft, Two dimensional flow, Three dimensional flow, Yaw, Walls, Thermal properties IDENTIFIERS: HIRT flow, Space shuttles, Finite difference theory, High Reynolds number tunnel flow, Space transportation, Reusable spacecraft, Mixing length, Unsteady flow (U)

Wall temperature effects on two- and three-dimensional high Reynolds number turbulent boundary layers are examined for representative high Reynolds number tunnel (HIRT) conditions relative to flight; also considered are hot-wall conditions relative to space shuttle subsonic and transonic flight during earth entry. Results show significant influences of wall-to-stagnation temperature ratio on the location of boundary-layer separation and the friction drag coefficient. The study also indicates how rapid model wall temperature during a full scale test and period of 2 to 10 sec may be undesirable for HIRT testing since unsteady aerodynamic phenomena can be influenced by rapidly changing turbulent boundary-layer wall temperature levels. (Notified author abstract) (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 765 392 22/2

GRUMMAN AEROSPACE CORP BETHPAGE N Y RESEARCH DEPT

Environmental Testing of Closed Pore Insulation (CPI), III - Rain Erosion Testing.

(U)

DESCRIPTIVE NOTE: Research memo.,

JUL 73 29P Russak, Michael A. ;  
REPT. NO. RM-573

UNCLASSIFIED REPORT

DESCRIPTORS: (\*RAINDROPS, EROSION), (\*HEAT SHIELDS, WATER IMPINGEMENT), (\*MANNED SPACECRAFT, ATMOSPHERE ENTRY), THERMAL INSULATION, FIBERS, TEST METHODS, MOISTUREPROOFING, ANGLE OF ATTACK  
IDENTIFIERS: CLOSED PORE INSULATION, SPACE SHUTTLES

(U)

(U)

The report details the results of simulated rain erosion testing done on Grumman's CPI (Closed Pore Insulation) material to further demonstrate its suitability as a viable TPS material for NASA's shuttle Orbiter. This program was done to assess the resistance of CPI to damage from rain that may be encountered during landing maneuvers following re-entry. This work indicated that while CPI was subject to some weight loss due to erosion, the material remained essentially waterproof during and after exposure, thus avoiding severe heat shield degradation due to excessive water pickup. (Author)

(U)

AD- 765 392

UNCLASSIFIED

PAGE

158

AD- 765 285

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 765 285 22/2

POLYTECHNIC INST OF BROOKLYN FARMINGDALE N Y DEPT OF AEROSPACE ENGINEERING AND APPLIED MECHANICS

Aerodynamic Characteristics of Two-Dimensional Waverider Configurations,

(U)

APR 72 7P Nardo, C. T. ;

REPT. NO. PIRAL-72-32

CONTRACT: AF 49(638)-1623

PROJ: AF-973:

TASK: 978101

MONITOR: AFOSR TR-73-1431

UNCLASSIFIED REPORT

Availability: Pub. in American Institute of Aeronautics and Astronautics Jnl., V10 n9 p1258-1261 Sep 72.

SUPPLEMENTARY NOTE: Prepared in cooperation with Grumman Aerospace Corp., Bethpage, N.Y. Revision of report dated 22 Mar 72.

DESCRIPTORS: (\*MANNED SPACECRAFT, \*ATMOSPHERE ENTRY), (\*REDEZVOUS SPACECRAFT, \*AERODYNAMIC CHARACTERISTICS), AERODYNAMIC CONFIGURATIONS, TWO DIMENSIONAL FLOW, MANEUVERABILITY, WINGS, CURVE FITTING, ANGLE OF ATTACK, LIFT

(U)

IDENTIFIERS: REUSABLE SPACECRAFT, SPACE

(U)

TRANSPORTATION, \*SPACE SHUTTLES, INVISCID FLOW

The analysis of two-dimensional waverider configurations is presented, utilizing a different inviscid approach than those employed in the past. An equivalent wedge angle is postulated and a viscous correction procedure is used in order to

obtain improved agreement with available experimental data. It is found that this approach extends the range of applicability of inviscid design procedures to include higher Mach numbers and lower Reynolds numbers. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 763 730 20/4 1/1

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Numerical Calculation of the Subsonic and Transonic Turbulent Boundary Layer on an Infinite Yawed Airfoil.

(U)

DESCRIPTIVE NOTE: Final rept. Apr 72-Apr 73,  
JUL 73 109P Adams, John C., Jr;  
REPT. NO. AEDC-TR-73-112  
PROJ: ARO-VF203, ARO-VD205

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO, Inc., Tullahoma, Tenn. Rept. no. ARO-VKF-TR-73-52.

DESCRIPTORS: (\*TURBULENT BOUNDARY LAYER, \*AIRFOILS), (\*COMPRESSIBLE FLOW, MATHEMATICAL MODELS), ATMOSPHERE ENTRY, THREE DIMENSIONAL FLOW, LIFTING REENTRY VEHICLES, THERMODYNAMICS, RENDEZVOUS SPACECRAFT, SUBSONIC CHARACTERISTICS, TRANSONIC CHARACTERISTICS, EQUATIONS OF MOTION, SURFACE TEMPERATURE, STALLING, WALLS, WIND TUNNEL MODELS, MODEL TESTS, NUMERICAL METHODS AND PROCEDURES

(U)

IDENTIFIERS: BOUNDARY LAYER, EQUATIONS, REUSEABLE SPACECRAFT, SPACE TRANSPORTATION, SPACE SHUTTLES, EDDY VISCOSITY

(U)

Formulation and application of a three-dimensional compressible turbulent boundary-layer analysis is presented for subsonic and transonic flow over a yawed airfoil of infinite extent. The governing turbulent boundary-layer equations are integrated using an implicit finite-difference procedure in conjunction with a scalar eddy viscosity model of three-dimensional turbulence. Comparisons with other analysis techniques as well as experimental measurements under subsonic wind tunnel conditions are presented to establish and ascertain the basic validity and applicability of the current technique. Also considered are the effects of a hot wall on the transonic, three-dimensional, turbulent boundary layer which have practical application to transonic space shuttle reentry. (Modified author abstract)

(U)

AD- 763 730

UNCLASSIFIED

PAGE

159

AD- 769 578

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 759 578 22/2

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

NASA-Convair ACS Space Shuttle Study at Mach Number 8.0.

(U)

DESCRIPTIVE NOTE: Final rept.,  
MAY 73 161P Strike, W. T., Jr.; Best,  
J. T., Jr;  
REPT. NO. AEDC-TR-73-40  
PROJ: ARO-VA023-432A, ARC-VB1264

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO, Inc., Tullahoma, Tenn. Rept. no. ARO-VKF-TR-72-140.

DESCRIPTORS: (\*RENDEZVOUS SPACECRAFT, \*ATTITUDE CONTROL SYSTEMS), DESIGN, WIND TUNNEL MODELS, FLAT PLATE MODELS, ATMOSPHERE ENTRY, AERODYNAMIC HEATING, HEAT TRANSFER, ANGLE OF ATTACK, SUPERSONIC FLOW

(U)

(U)

(U)

IDENTIFIERS: \*REUSABLE SPACECRAFT, SPACE TRANSPORTATION, \*SPACE SHUTTLES

Some aerothermodynamic design problems of the Space Shuttle attitude control system (ACS) were experimentally studied in a series of tests conducted at Mach number 8, at Reynolds numbers of 1,000,000 and 5,000,000, using a flat plate containing interchangeable, flush-mounted nozzle cavities and lateral jet nozzles. The ACS configurations considered in this test program were a single supersonic nozzle and a cluster of four symmetrically located supersonic nozzles. Also, some preliminary results were obtained with nozzles similar to those on the flat plate used to simulate the yaw controls on a 2-percent-scaled nose section of the Convair Aerospace B-90 booster.

(U)

(Author Modified Abstract)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 759 176 22/2 20/4

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENN

Heat-Transfer and Flow-Field Tests of the  
McDonnell Douglas-Martin Marietta Space  
Shuttle Configurations. (U)

DESCRIPTIVE NOTE: Final rept. Jun 71-Jan 72,  
APR 73 106P Matthews, R. K.; Eaves, R.  
H., Jr.; Martindale, W. R.;  
REPT. NO. AEDC-TR-73-53  
PROJ: ARO-VT1162

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO,  
Inc., Tullahoma, Tenn. Rept. no. ARO-VKF-TR-  
72-124.

DESCRIPTORS: (\*RENDEZVOUS SPACECRAFT, \*AERODYNAMIC  
HEATING), MANNED SPACECRAFT, ASCENT TRAJECTORIES,  
ATMOSPHERE ENTRY, HEAT TRANSFER, FLOW FIELDS, WIND  
TUNNEL MODELS, MODEL TESTS

IDENTIFIERS: \*SPACE SHUTTLES (U)  
(U)

Aerothermodynamic tests of Phase B space  
shuttle configurations proposed by McDonnell  
Douglas--Martin Marietta were conducted at  
Mach numbers 8 and 10.5. Test conditions  
provided both Mach number and Reynolds number  
simulation for typical ascent and reentry  
trajectories. This report provides a comprehensive  
analysis of the major test results and also presents  
data comparisons with theoretical calculations.  
Specific areas covered are ascent heating and shock  
interference, booster reentry heating and flow  
fields, and orbiter reentry analysis which includes  
leeward heating, windward shock angles and flow  
fields, windward surface heating, and boundary-layer  
transition. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 757 424 22/2 11/7

GRUMMAN AEROSPACE CORP BETHPAGE N Y RESEARCH DEPT

Environmental Testing of Closed Pore  
Insulation (CPI). II. Salt Spray  
Testing, (U)

FEB 73 19P Feldman, Carl; Russak, Michael  
;  
REPT. NO. RM-570

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-756 204.  
DESCRIPTORS: (\*THERMAL INSULATION, SALT SPRAY TESTS),  
(\*RENDEZVOUS SPACECRAFT, AERODYNAMIC HEATING),  
ATMOSPHERE ENTRY, MANNED SPACECRAFT, LIFTING REENTRY  
VEHICLES, HEAT SHIELDS, HEAT RESISTANT GLASS, SEA WATER,  
FLUXES(FUSION), ENVIRONMENTAL TESTS (U)  
IDENTIFIERS: CLOSED PORE INSULATION, SPACE  
SHUTTLES (U)

IAC ACCESSION NUMBER: MCIC-086186  
IAC DOCUMENT TYPE: MCIC -HARD COPY--

A series of tests was performed on Grumman-  
developed surface insulation material, CPI, to  
demonstrate its suitability for the shuttle orbiter  
thermal protection system. Salt spray testing was  
done to determine the effect of sea water mist of  
CPI's performance during simulated re-entry thermal  
cycling. This type of testing is mandatory because  
of the sea coast environment of Cape Kennedy  
where the shuttle will be launched. CPI-4 was  
tested and the results gave a good indication of the  
type and degree of degradation to be expected in  
actual use. (Author) (U)

AD- 759 176

UNCLASSIFIED

PAGE

160

AD- 757 424

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 756 854 22/2 20/4

BOEING CO SEATTLE WASH

Aerodynamic Stability and Control, Data,  
Model 844-2035.

(U)

FEB 72 195P  
REPT. NO. D2-8174  
CONTRACT: AF 33(600)-41517

UNCLASSIFIED REPORT

Availability: Available in microfiche only.  
DESCRIPTORS: (\*LIFTING REENTRY VEHICLES, AERODYNAMIC CHARACTERISTICS), (\*RENDEZVOUS SPACECRAFT, LIFTING REENTRY VEHICLES), AEROSPACE CRAFT, AERODYNAMIC CONTROL SURFACES, TRANSONIC FLIGHT, SUPERSONIC FLIGHT, HYPERSONIC FLIGHT, BRAKING, STABILITY, LANDING IDENTIFIERS: X-20 SPACECRAFT, SPACE SHUTTLES, SPACECRAFT MODIFICATION (U)

The aerodynamic stability and control characteristics of the 844-2035 Dyna Soar glider are presented. These data are based on wind tunnel tests, where data are available, where not available, theoretical estimates have been made for the vehicle characteristics. This is the interim glider configurations. Some vehicle characteristics peculiar to this configuration are not satisfactory and will be modified for the final configuration. The data presented will be revised as additional wind tunnel data are received and better estimates of the vehicle characteristics are made. (U)

AD- 756 854

UNCLASSIFIED

PAGE

161

AD- 756 204

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 756 204 22/3 22/2

GRUMMAN AERCSpace CORP BETHPAGE N Y RESEARCH DEPT

Environmental Testing of Closed Pore Insulation (CPI) I - ARC Jet Testing.

(U)

DESCRIPTIVE NOTE: Research memo.,  
JAN 73 17P Geschwind, G. ; Hershhaft, A. ;  
Hoff, M. ; Perkins, R. ;  
REPT. NO. RM-565

UNCLASSIFIED REPORT

DESCRIPTORS: (\*HEAT SHIELDS, THERMAL ANALYSIS), (\*RENDEZVOUS SPACECRAFT, \*ATMOSPHERE ENTRY), THERMAL INSULATION, ELECTRIC ARCS, JETS, THERMAL SHOCK, ENVIRONMENTAL TESTS (U)  
IDENTIFIERS: CLOSED PORE INSULATION, SPACE SHUTTLES (U)

IAC ACCESSION NUMBER: NCIC-086185  
IAC DOCUMENT TYPE: NCIC -HARD COPY--  
A series of tests was performed on Grumman-developed closed pore insulation (CPI) to demonstrate its suitability for the shuttle thermal protection system (TPS) in a simulated environment to be encountered by the heat shield in service. Arc jet testing performed as part of Contract NAS 1-10713 was done on material whose composition had not been optimized, splash heating was used instead of profile heating, and a mounting procedure was initiated that introduced stress raisers into the specimens ultimately leading to their failure. Because NASA relies heavily on arc jet testing to screen potential TPS materials and systems, the Research Department arc jet was used in a more realistic re-entry temperature-time profile. CPI-4 (CPI with 4% cobalt oxide), a composition that was optimized in a previous study, was tested and gave good results, showing that CPI could survive thermal cycling similar to that which will be met during shuttle re-entry operations. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 755 355 22/2 20/4 22/3

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENNHeat-Transfer Investigation of Langley  
Research Center Delta Wing Configurations  
at Mach Numbers 8 and 10.5.

(U)

DESCRIPTIVE NOTE: Final rept. Jun-Sep 71,  
FEB 73 43P  
Matthews, R. K.; Eaves, R. H., Jr.;  
Buchanan, T. D.;  
REPT. NO. AEDC-TR-72-196  
PROJ: AF-ARO-VT1162

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO,  
Inc., Tullahoma, Tenn, Rept. no. ARO-VKF-IR-  
72-160.

DESCRIPTORS: (\*LIFTING REENTRY VEHICLES, \*AERODYNAMIC  
HEATING), (\*RENDEZVOUS SPACECRAFT, \*DELTA WINGS), SKIN  
FRICTION, ATMOSPHERE ENTRY, ASCENT TRAJECTORIES, DESCENT  
TRAJECTORIES, FLOW FIELDS, BOUNDARY LAYER TRANSITION,  
WIND TUNNEL MODELS, HYPERSONIC CHARACTERISTICS, HEAT  
TRANSFER

IDENTIFIERS: \*SPACE SHUTTLES (U)  
(U)

Heat-transfer tests for two simple delta wing  
configurations submitted by NASA-Langley  
Research Center were conducted at Mach numbers  
8 and 10.5. Test conditions provided both Mach  
number and Reynolds number simulation for typical  
lifting body reentry trajectories. This report  
presents the major test results and comparisons with  
theoretical calculations. Specific test results  
include heat-transfer distributions, shock angles,  
limited pressure measurements, and boundary-layer  
transition results. (Author)

(U)

AD- 755 355

UNCLASSIFIED

PAGE

162

AD- 755 354

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 755 354 22/2 20/4 22/3

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE  
STATION TENNHeat-Transfer and Flow-Field Tests of the  
North American Rockwell/General Dynamics  
Convair Space Shuttle Configurations.

(U)

DESCRIPTIVE NOTE: Final rept. Jun-Sep 71,  
JAN 73 95P  
R. K.; Trimmen, L. L.;  
Wartindale, W. R.; Matthews,  
REPT. NO. AEDC-TR-72-169  
PROJ: AF-ARO-VT1162

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO,  
Inc., Tullahoma, Tenn, Rept. no. ARO-VKF-TR-  
72-123.

DESCRIPTORS: (\*LIFTING REENTRY VEHICLES, \*AERODYNAMIC  
HEATING), (\*RENDEZVOUS SPACECRAFT, DELTA WINGS), SKIN  
FRICTION, ATMOSPHERE ENTRY, ASCENT TRAJECTORIES, DESCENT  
TRAJECTORIES, FLOW FIELDS, BOUNDARY LAYER TRANSITION,  
WIND TUNNEL MODELS, HYPERSONIC CHARACTERISTICS, HEAT  
TRANSFER

IDENTIFIERS: \*SPACE SHUTTLES (U)  
(U)

Aerothermodynamic tests of Phase B space  
shuttle configurations proposed by North American  
Rockwell/General Dynamics Convair were  
conducted at Mach number 8. Test conditions  
provided both Mach number and Reynolds number  
simulation for typical ascent and reentry  
trajectories. This report provides a comprehensive  
analysis of the major test results and also presents  
data comparisons with theoretical calculations.  
Specific areas covered are: ascent heating and  
shock interference, booster reentry heating and flow  
fields, and orbiter reentry including leeside  
heating, windward shock angles and flow fields,  
windward surface heating, and boundary-layer  
transition. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 754 915 22/2

GRUMMAN AEROSPACE CORP BETHPAGE N Y

Finite Element Modeling and Optimization of Aerospace Structures. (U)

DESCRIPTIVE NOTE: Final rept. 15 Apr 71-15 Apr 72,

AUG 72 58P

CONTRACT: F33615-71-C-1466

PROJ: AF-1467

TASK: 146701

MONITOR: AFFDL

TR-72-59

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AEROSPACE CRAFT, OPTIMIZATION), DELTA WINGS, AERODYNAMIC LOADING, LOAD DISTRIBUTION, FUSELAGES, BUCKLING, AIRPLANE PANELS, MATHEMATICAL MODELS (U)

IDENTIFIERS: SPACE SHUTTLES, FINITE ELEMENT ANALYSIS, COMPUTER AIDED DESIGN, DESIGN CRITERIA (U)

The report documents a study made of the optimization of typical aircraft structural components using the Automated Structural Optimization Program (ASOP) described in AFFDL-TR-70-118. The structures examined were a fuselage structure for a proposed space shuttle orbiter and a wing structure for the same vehicle. Examples are given of practical finite element modeling of these structures. (Author) (U)

AD- 754 915

UNCLASSIFIED

PAGE

163

AD- 750 793

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 750 793 22/3 22/2

BELL AEROSPACE CO BUFFALO N Y

Rain Erosion Characteristics of Thermal Protection System Materials at Subsonic Velocities. (U)

DESCRIPTIVE NOTE: Summary technical rept. 3 Apr-30 Jun 72,

AUG 72 118P

CONTRACT: F33615-71-C-1219

PROJ: AF-7342

TASK: 734007

MONITOR: AFML TR-72-145

UNCLASSIFIED REPORT

DESCRIPTORS: (\*HEAT SHIELDS, RAIN), (\*RENDEZVOUS SPACECRAFT, -HEAT SHIELDS), EROSION, SUBSONIC CHARACTERISTICS, INTENSITY, ANGLE OF ATTACK, COMPOSITE MATERIALS, TEST METHODS (U)

IDENTIFIERS: ABLATIVE MATERIALS, \*RAIN EROSION, \*SPACE SHUTTLES (U)

IAC ACCESSION NUMBER: MCIC-085105

IAC DOCUMENT TYPE: MCIC -HARD COPY--

The relative rain erosion resistance of low density-thermal protection materials for the space shuttle were evaluated at velocities of 200, 350, and 410 miles per hour, angles of attack of 10, 20, 40, and 90 degrees and rainfall intensities of 1/4, 1/2 and 1 inch per hour on the AFML-Bell rotating arm rain erosion test apparatus. (Author, modified-PL) (U)

IAC SUBJECT TERMS: M--(U)THERMAL PROTECTION, INSULATION, SILICA COMPOSITE, MILLITE COMPOSITE, CARBON/CARBON COMPOSITE, RAIN EROSION, SPACE SHUTTLE VEHICLE;



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 748 562 22/2 20/4

NATIONAL RESEARCH COUNCIL OF CANADA OTTAWA (ONTARIO)  
Supersonic Dynamic Stability Experiments on  
the Space Shuttle.

(U)

72 10P Orlik-Ruckemann, K. J. ;  
LaBerge, J. G. ; Hanff, E. S. ;

UNCLASSIFIED REPORT

Availability: Paper copy available from AIAA, 1290  
Ave of the Americas, New York, N. Y. 10019.  
PC\$2.00/MF\$1.00.

SUPPLEMENTARY NOTE: Presented at the AIAA Aerospace  
Sciences Meeting (10th), San Diego, Calif.,  
17-19 Jan 72 (AIAA Paper No. 72-135).

DESCRIPTORS: (\*RENDEZVOUS SPACECRAFT, SUPERSONIC  
CHARACTERISTICS), STABILITY, WIND TUNNEL MODELS, EXHAUST  
FLAMES, FLOW FIELDS, FLOW VISUALIZATION, STAGING.

EXPERIMENTAL DATA (U)  
IDENTIFIERS: PLUMES, ROCKET EXHAUST, SPACE  
SHUTTLES (U)

A wind-tunnel study was performed of the longitudinal dynamic stability of the shuttle spacecraft at supersonic speeds. In particular, the study included the determination of the damping-in-pitch characteristics of the orbiter and of the booster, both separately and in a mated launch configuration, and the investigation of the effect of a simulated rocket exhaust plume and of the static and dynamic interference during abort separation. Static interference is defined here as caused by the proximity of the second vehicle when that vehicle is stationary, whereas dynamic interference denotes the same effect but with the other vehicle performing an oscillatory motion. (Author)

(U)

AD- 748 562

UNCLASSIFIED

PAGE

AD- 747 765

UNCLASSIFIED

164

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 747 765 20/4

AIR FORCE FLIGHT DYNAMICS LAB WRIGHT-PATTERSON AFB  
OHIO

Recent Notes and Data on Interference  
Heating.

(U)

DESCRIPTIVE NOTE: Rept. for Jun 70-Jun 71,  
FEB 72 36P Neumann, Richard D. ;  
REPT. NO. AFDL-TR-72-12  
PROJ: AF-136C  
TASK: 136607

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AERODYNAMIC HEATING, \*HYPERSONIC  
CHARACTERISTICS), (\*SHOCK WAVES, INTERACTIONS),  
MATHEMATICAL PREDICTION, TWO DIMENSIONAL FLOW, THREE  
DIMENSIONAL FLOW, REVIEWS, BOUNDARY LAYER, FINS,  
AEROSPACE CRAFT, FLAT PLATE MODELS, REENTRY VEHICLES,  
RENDEZVOUS SPACECRAFT

(U)

IDENTIFIERS: REUSABLE SPACECRAFT, SPACE  
TRANSPORTATION, SPACE SHUTTLES, INTERFERENCE  
HEATING

(U)

The report presents recent observations and data on the shock interaction problem in the aerodynamic heating of military aerospace vehicles. Information on both two and three dimensional interactions are presented, and the literature from July 1967 to August 1971 is reviewed. Some features of the interaction observed by various authors have been investigated in greater depth in order to clarify the features of the interaction process. Conclusions from these data relative to current hypersonic vehicle design studies of the space shuttle are drawn. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 746 656 22/3

GRUMMAN AEROSPACE CORP BETHPAGE N Y RESEARCH DEPT

Optima' Trajectories for the Flyback Shuttle.

(U)

DESCRIPTIVE NOTE: Research rept.,  
JUL 72 41P Moyer, H. Gardner ;  
REPT. NO. RE-433

UNCLASSIFIED REPORT

DESCRIPTORS: (\*TRAJECTORIES, OPTIMIZATION), (\*RENDEZVOUS SPACECRAFT, TRAJECTORIES), COMPUTER PROGRAMMING, RENDEZVOUS TRAJECTORIES, DESCENT TRAJECTORIES, SOFT LANDINGS, LAUNCHING SITES, LANDING FIELDS, MATHEMATICAL MODELS, MANNED SPACECRAFT (U)  
IDENTIFIERS: \*SPACE SHUTTLES, FORTRAN, FORTRAN 4 (U)  
PROGRAMMING LANGUAGE (U)

A new procedure for the optimization of branched-path systems is successfully applied to flyback shuttle trajectories. The boundary and transversality conditions are satisfied by three extremals that meet at an arbitrarily chosen branch point. The position of the branch point is then improved, and the cycle repeated. The performance index for the orbiter branch is the weight placed in orbit. For the booster-return branch it is the square of the distance between the final point and the landing field. The complete family of trajectories representing the various trade-offs between these two indices is calculated for a problem that specifies the landing field as coinciding with the launch site. The computer program also has the capability of handling down-range landing sites, orbital rendezvous and intercept, and aerodynamic load constraints. (Author)

(U)

AD- 746 656

UNCLASSIFIED

PAGE

165

AD- 743 508

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 743 508 22/2 21/8.1

GRUMMAN AEROSPACE CORP BETHPAGE N Y RESEARCH DEPT

Buckling Analysis of Shuttle Disposable Liquid Hydrogen Tank with Floating Rings.

(U)

DESCRIPTIVE NOTE: Research memo.,  
MAY 72 29p Winter, Robert ;Crouzet-  
Pascal, Jacques ;  
REPT. NO. RM-540

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SPACE STATIONS, STIFFENED CYLINDERS), (\*PROPELLANT TANKS, BUCKLING), STRUCTURAL PROPERTIES, RINGS, STRESSES, LIQUEFIED GASES, HYDROGEN, WEIGHT IDENTIFIERS: SPACE SHUTTLES, CYLINDRICAL BODIES, SHELLS(STRUCTURAL FORMS) (U)  
(U)

A scheme for treating so-called floating rings is recommended for use in the buckling analysis of stiffened cylindrical shells. Critical stresses are calculated and compared to those for integral rings, for a design representative of the unpressurized Space Shuttle liquid hydrogen (LH2) tank. The ring rigidity required to prevent general instability is found to be much less than that required by the Shanley criterion, with a correspondingly significant weight saving. There is very little difference in total shell weight between floating and internal rings for equal strength designs. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 743 096 20/4 13/2

NATIONAL RESEARCH COUNCIL OF CANADA OTTAWA (ONTARIO) DIV OF MECHANICAL ENGINEERING

Quarterly Bulletin of the Division of Mechanical Engineering and the National Aeronautical Establishment.

(U)

DESCRIPTIVE NOTE: Rept. for 1 Jan-31 Mar 72.

MAR 72 67P

REPT. NO. DME/NAE-1972(1)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated 31 Dec 71, AD-737 119.

DESCRIPTORS: (\*PHYSICS LABORATORIES, REPORTS). (\*SCIENTIFIC RESEARCH, CANADA). COMPUTER PROGRAMMING, AIRCRAFT NOISE, FLUID MECHANICS, VIBRATION, SAFETY BELTS, FUELS, LUBRICANTS, WIND TUNNELS, GAS BEARINGS, PLASMAS(PHYSICS), DATA PROCESSING, MATHEMATICAL MODELS, AERODYNAMICS, HYDRODYNAMICS, SPACECRAFT, SHIP HULLS (U)

IDENTIFIERS: SPACE SHUTTLES, UNSTEADY FLOW (U)

:Contents: Aerodynamic and structural noise research at NAE; The dynamics of contained oil slicks; Current projects of the Division of Mechanical Engineering and the National Aeronautical Establishment.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 742 995 22/2

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN.

Abort Separation Pressure Distributions on McDonnell-Douglas Space Shuttle Configurations at Mach Numbers 2, 3, and 5.

(U)

DESCRIPTIVE NOTE: Final rept.,

MAY 72 174P

Strike, W. T. , Jr;

REPT. NO. AEC-TR-72-46

CONTRACT: F40600-72-C-0003

PROJ: ARO-VA1163

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO, Inc., Tullahoma, Tenn. Rept. no. ARO-VKp-TR-71-247.

DESCRIPTORS: (\*RENDEZVOUS SPACECRAFT, SEPARATION). AERODYNAMIC LOADING, PRESSURE, JET FLAMES, SIMULATION, MODEL TESTS, LIFTING REENTRY VEHICLES, SUPERSONIC CHARACTERISTICS, HYPERSONIC CHARACTERISTICS, STAGING, ABORT, LAUNCH VEHICLES (U)

IDENTIFIERS: ORBITER BOOSTER CONFIGURATIONS, DISTRIBUTION, PRESSURE, REUSABLE SPACECRAFT, SPACE TRANSPORTATION, SPACE SHUTTLES (U)

The report summarizes the pressure distributions obtained on the lower surface of an orbiter and upper surface of a booster (adjacent model surfaces) during possible staging and abort maneuvering positions, and for various proposed launch configurations, of a space shuttle vehicle. The results were obtained with and without booster and orbiter plume simulation at nominal free-stream Mach numbers of 2, 3, and 5. A brief description is made of the calibration of nozzles used to generate plumes for the power-on simulation. Results demonstrate the importance of plume simulation in the aerodynamic loading of a vehicle and suggest that plume simulation is needed to evaluate properly the aerodynamic coefficients for space shuttle vehicles. (Author)

(U)

AD- 743 096

UNCLASSIFIED

PAGE

166

AD- 742 995

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 742 984 22/2

AEROSPACE CORP EL SEGUNDO CALIF SYSTEMS ENGINEERING  
OPERATIONS

Chemical Orbit-to-Orbit Shuttle Task  
Summary.

DESCRIPTIVE NOTE: Final rept. Jul 69-Sep 70,  
SEP 70 43P Forslund, Gerald M. ;  
REPT. NO. TOR-0059(6758-01)-14  
CONTRACT: F04701-70-C-0059  
MONITOR: SAMSO TR-72-144

UNCLASSIFIED REPORT

DESCRIPTORS: (\*RENDEZVOUS SPACECRAFT, \*MISSION  
PROFILES), LIQUID PROPELLANT ROCKET ENGINES, SECOND-  
STAGE MOTORS, CIRCULAR ORBITS, LUNAR TRAJECTORIES, SPACE  
STATIONS, PAYLOAD, DESIGN, COSTS (U)  
IDENTIFIERS: OOS(ORBIT TO ORBIT SHUTTLES), ORBIT TO  
ORBIT SHUTTLES, REUSABLE SPACECRAFT, SPACE SHUTTLES (U)

The feasibility of a single OOS configuration  
capable of performing the combined DOD/NASA  
mission requirements has been assessed. Two  
vehicle configurations have been identified, either  
of which can accomplish the mission spectrum when  
operated in a combination of single-stage reusable/  
expendable and tandem reusable (two stages)  
modes. Supporting mission/operational requirements,  
evolutionary vehicle conceptual designs, and  
resultant performance have been developed to support  
this conclusion. A representative development  
program, costing data, and technology for these  
vehicles have been specified. A major problem area,  
that of utilizing the space-based operational mode,  
has been identified and recommended for follow-on  
study. (Author) (U)

AD- 742 984

UNCLASSIFIED

PAGE

167

AD- 741 899

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 741 899 20/11

TEXAS UNIV AUSTIN DEPT OF AEROSPACE ENGINEERING AND  
ENGINEERING MECHANICS

Aeroelastic Stability of Thin Shell  
Structures at Subsonic Mach Numbers and the  
Active Suppression of Flutter Phenomena. (U)

DESCRIPTIVE NOTE: Final rept. 1 Dec 70-30 Nov 71,  
JAN 72 31P Stearman, Ronald O. ;  
CONTRACT: AF-AFSR-1998-71  
PROJ: AF-9782  
TASK: 978201  
MONITOR: AFSR TR-72-1010

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SHELLS(STRUCTURAL FORMS),  
AEROELASTICITY), FLUTTER, STABILITY, RESPONSE, FLOW  
FIELDS, AERODYNAMIC CONTROL SURFACES, STALLING, RAILROAD  
CARS, HUMAN FACTORS ENGINEERING, MATHEMATICAL MODELS,  
WIND TUNNEL MODELS, SPACECRAFT (U)  
IDENTIFIERS: SPACE SHUTTLES (U)

Experimental and theoretical research on  
aeroelastic stability and response problems has been  
carried out this past year in several areas. A  
major portion of the research centered around an  
investigation on the stability of thin cylindrical  
shell structures subjected to a subsonic compressible  
flow environment. Other studies were concerned  
with the active suppression of interfering lifting  
surface flutter phenomenon and the active control of  
rapid transit system response for improving ride  
quality. Studies were also conducted on the  
suppression of stall and stall flutter phenomenon.  
A brief description of this research is presented  
herein. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 741 202 1/3 5/5

NAVAL AIR DEVELOPMENT CENTER WARMINSTER PA CREW SYSTEMS  
DEPT

G Protective Tilting Aircraft Seats. (U)

DESCRIPTIVE NOTE: Interim rept.,  
 MAR 72 56P VON Beckh,Harald J. ;  
 REPT. NO. NADC-72063-CS  
 PROJ: F32-451-401, MF51-524.005

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIRCRAFT SEATS, POSITIONING  
 DEVICES(MACHINERY)), (\*HUMAN FACTORS ENGINEERING,  
 ACCELERATION TOLERANCE), PROTECTION, ATMOSPHERE ENTRY,  
 MAN MACHINE SYSTEMS, DESIGN, FEASIBILITY STUDIES, NAVAL  
 RESEARCH, LIFTING REENTRY VEHICLES, RECOVERABLE BOOSTER  
 MOTORS, RENDEZVOUS SPACECRAFT (U)  
 IDENTIFIERS: REUSABLE SPACECRAFT, SPACE SHUTTLES,  
 SPACE TRANSPORTATION (U)

Several tilting, supinating seats which have been tested in flight and on centrifuges are described and their biomedical adequacy assessed. Only those, which assure unrestricted visibility in all directions will be accepted by the pilots. This can be achieved by an adequate selection of the pivot points, and other design criteria which are synthesized. Concentrated effort of designers, aeromedical investigators and - last but not least - pilots is urged for the realization of such an integrated G protective man-machine system. Supinating seats should also be provided for the crew of winged reentry vehicles (Space-Shuttle). For the passengers multi-directional G protective systems with escape capabilities should be developed. (Author)

(U)

AD- 741 202

UNCLASSIFIED

PAGE

168

AD- 741 191

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 741 191 14/2

OFFICE OF NAVAL RESEARCH LONDON (ENGLAND)

New Shock Tube Laboratory at Aachen,  
 Germany, (U)

MAR 72 18P Rangan,Arthur A. ;  
 REPT. NO. CARL-R-5-72

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*SHOCK TUBES, LABORATORIES), WEST GERMANY,  
 TEST FACILITIES, RENDEZVOUS SPACECRAFT, LIFTING REENTRY  
 VEHICLES, RECOVERABLE BOOSTER MOTORS, GAS IONIZATION (U)  
 IDENTIFIERS: \*REUSABLE SPACECRAFT, \*SPACE SHUTTLES,  
 SPACE TRANSPORTATION, GAS DYNAMICS (U)

The report describes the new Shock Tube Laboratory of the Institut für Allgemeine Mechanik, Technische Hochschule, Aachen, Germany. Detailed descriptions of the facilities are given together with a report on EUROMECH no. 29, a Colloquium on High Temperature Gasdynamics which was organized by Prof. Schultz-Grunow in connection with the dedication ceremonies of his new laboratory. (Author)

(U)

UNCLASSIFIED

DDC REPORT 818L1OGRAPHY SEARCH CONTROL NO. ZOMD7

AD- 738 645 22/2 22/1

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Abort Separation, Longitudinal Force, and Moment Characteristics of McDonnell Douglas Booster and Orbiter Space Shuttle Vehicles at Mach Numbers 2.0 to 6.0.

(U)

DESCRIPTIVE NOTE: Final rept.,  
MAR 72 310P Burt, R. H. ;  
REPT. NO. AEDC-TR-72-11  
CONTRACT: F40600-72-C-0003  
PROJ: AF-921E, ARO-VA1163

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO, Inc., Tullahoma, Tenn. Rept. no. ARO-VKF-TR-71-196.

DESCRIPTORS: (\*RENDEZVOUS SPACECRAFT, ABORT),  
(\*RECOVERABLE BOOSTER MOTORS, SEPARATION), WIND TUNNEL  
MODELS, MODEL TESTS, SCALE, ANGLE OF ATTACK, SIDESLIP,  
SIMULATION, COLD FLOW, SUPERSONIC NOZZLES, EXHAUST  
FLAMES, FLIGHT CONTROL SYSTEMS, HYPERSONIC  
CHARACTERISTICS, SUPERSONIC CHARACTERISTICS (U)  
IDENTIFIERS: \*SPACE SHUTTLES (U)

Results are presented for abort staging wind tunnel tests which were conducted to determine the aerodynamic characteristics of the McDonnell Douglas booster and orbiter configurations in close proximity. Data were obtained on both scale models over an angle-of-attack range from -10 to +10 deg for zero sideslip angle. Orbiter incidence angle relative to the booster was varied from -10 to +10 deg which provided an orbiter angle-of-attack range from -20 to +20 deg. The models were tested at Mach numbers from 2.0 to 6.0 at several separation distances and power conditions. An annular cold-flow nozzle in each model was used to simulate booster and orbiter plumes at various altitudes along a proposed ascent trajectory. Plume simulation for 100, 50, and 0 percent of full power for the booster and 100, 50, 25, and 1 percent of full power for the orbiter was investigated, with 50-percent booster and 100-percent orbiter power as the nominal conditions. Pitch control effectiveness data were obtained for both booster and orbiter with power on and off. (U)

AD- 738 645

UNCLASSIFIED

PAGE

169

AD- 737 406

UNCLASSIFIED

ZOMD7

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOMD7

AD- 737 406 4/1 22/2

MICHIGAN UNIV ANN ARBOR DEPT OF AEROSPACE ENGINEERING

Ionospheric Aerodynamics Related to Space Vehicles, Space Shuttles and Satellites.

(U)

DESCRIPTIVE NOTE: Final rept.,  
FEB 72 24P Cng.R. S. B. ;  
CONTRACT: AF-AFOSR-825-67  
PROJ: AF-9783  
TASK: 9783C2  
MONITOR: AFOSR TR-72-0428

UNCLASSIFIED REPORT

DESCRIPTORS: (\*IONOSPHERE, SPACE ENVIRONMENTS), SPACE STATIONS, SATELLITES(ARTIFICIAL), IONIZATION, MAGNETOHYDRODYNAMICS, ELECTRON DENSITY, SPACE FLIGHT

(U)

IDENTIFIERS: SPACE SHUTTLES, FOKKER-PLANCK EQUATIONS (U)

The report summarizes the activities and results obtained during the tenure of the Grant. The relaxation problem of the Fokker-planck collision operator is investigated. Comparison are made between the relaxation times of the Brownian Motion and the BGK collision operators. The AC electrical conductivity and the high-frequency electrical conductivity formulas for a fully ionized gas are derived. A new mechanism of an ionizing wave front is introduced. Its structure and propagation is studied. Criteria for instabilities are found. The effect of a small amount of collisions on the stability of ion acoustic waves, drift waves, etc are considered. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 735 290 21/9.1 22/4

GENERAL DYNAMICS CORP SAN DIEGO CALIF CONVAIR AEROSPACE DIV

Orbit-to-Orbit Shuttle Propellant Integration and Handling Study.

(U)

DESCRIPTIVE NOTE: Final rept. Jul 70-Aug 71,  
DEC 71 284P Heald, Daniel A.; Stone,  
Gordon R.; Kaye, Sam;

REPT. NO. GDC-BN270-013-18

CONTRACT: F04611-70-C-0087

PROJ: AF-3058

TASK: 305808

MONITOR: AFRPL TR-71-117

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*FLUORINE, HANDLING), (\*RENDEZVOUS  
SPACECRAFT, LIQUID ROCKET OXIDIZERS), LIQUEFIED GASES,  
TOXICITY, HAZARDS, STORAGE, PROPELLANT TRANSFER,  
LEAKAGE (FLUID), GROUND SUPPORT EQUIPMENT

(U)

IDENTIFIERS: OOS (ORBIT TO ORBIT SHUTTLES), ORBIT TO  
ORBIT SHUTTLES, \*SPACE SHUTTLES

(U)

The study examines the hazards inherent in the design and operation of ground and vehicle systems for a liquid fluorine space vehicle. The selected tanking system uses LN2 to preclude boiloff in the storage vessel and in the space vehicle propellant tank. Three possible emergency courses of action are provided in the system arrangement. It was concluded that a safe and practical ground fluorine system can be designed, avoiding technology problems, but paying particular attention to eliminate leak and reaction sources. (Author)

(U)

AD- 735 290

UNCLASSIFIED

PAGE

170

AD- 733 896

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 733 896 21/2 21/9 14/2

GRUMMAN AEROSPACE CORP BETHPAGE N Y RESEARCH DEPT

On the Simulation of plumes from High Pressure Hydrogen/Oxygen Rocket Engines.

(U)

DESCRIPTIVE NOTE: Research memo.,

NOV 71 30P Hopkins, Harold; Leng, Jarvis

; Oman, Richard; Konoska, Wayne;

REPT. NO. RM-524

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*TEST FACILITIES, DESIGN), (\*EXHAUST  
GASES, \*DAMAGE ASSESSMENT), (\*RENDEZVOUS SPACECRAFT,  
\*GASEOUS ROCKET PROPELLANTS), AERODYNAMIC HEATING,  
LAMINAR FLOW, TURBULENCE, HEAT TRANSFER, FLAT PLATE  
MODELS, ENTHALPY, TEST METHODS

(U)

(U)

IDENTIFIERS: ROCKET PLUMES, \*SPACE SHUTTLES

The report describes the Grumman Research Department's technique for achieving Reynolds numbers higher than those achievable by any other known technique, and outlines experiments which can be used to increase the confidence level when extrapolating sub-scale plume impingement heating to full-scale flight conditions. Initial experiments established the feasibility of using a backward-running detonation wave to produce the correct enthalpy and chemistry of the simulated combustion chamber gases. Low pressure tests (up to 1500 psi) are surmized which measured heating on simulated impingement surfaces from one and two engines. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 731 963 22/1 5/3

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA SCIENCE AND TECHNOLOGY DIV

Comparison of Chemical and Nuclear Propulsion for Lunar and Cislunar Transportation Systems, (U)

OCT 70 29P Finke,Reinald G.; Oliver, Robert C.;  
REPT. NO. P-687  
CONTRACT: DANC15-67-C-0011  
PROJ: ARPA-T-58, ARPA-T-45  
MONITOR: IDA/HQ 70-11647

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SPACE PROPULSION, COSTS), (\*RENDEZVOUS SPACECRAFT, LUNAR TRAJECTORIES), SPACECRAFT NUCLEAR PROPULSION, CRYOGENIC PROPELLANTS, VELOCITY, SPECIFIC IMPULSE, MANNED SPACECRAFT, CARGO, MISSION PROFILES, TRANSFER TRAJECTORIES, PARKING ORBIT TRAJECTORIES, COST EFFECTIVENESS (U)  
IDENTIFIERS: NERVA, OOS(ORBIT TO ORBIT SHUTTLES), ORBIT TO ORBIT SHUTTLES, \*SPACE SHUTTLES, INCREMENTAL VELOCITY, EARTH TO ORBIT SHUTTLES, EOS(EARTH TO ORBIT SHUTTLES) (U)

Nuclear (NERVA) solid-core propulsion systems are compared to advanced cryogenic (F2/H2 and O2/H2) chemical propulsion systems for an orbit-to-orbit vehicle operating in the earth-moon space. The orbit-to-orbit vehicle is assumed to use propellants delivered by a reusable earth-to-orbit shuttle (EOS). High-velocity-increment missions (lunar and geostationary orbit) are emphasized. Optimum operating regimes for reusable and expendable chemical and nuclear systems are indicated. (Author) (U)

AD- 731 963

UNCLASSIFIED

PAGE

171

AD- 731 771

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 731 771 22/2 22/1

ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AIR FORCE STATION TENN

Dynamic Stability Testing of Space Shuttle Configurations during Abort Separation at Mach Numbers 1.76 and 2. (U)

DESCRIPTIVE NOTE: Final rept.,  
OCT 71 65P Usselton,Bob ;Wallace,Arthur R.;  
REPT. NO. AEDC-TR-71-193  
CONTRACT: F42600-72-C-0003  
PROJ: ARO-VT2128

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Prepared in cooperation with ARO, Inc., Tullahoma, Tenn., Rept. no. ARC-WVF-TR-71-115.  
DESCRIPTORS: (\*RENDEZVOUS SPACECRAFT, SEPARATION), (\*MANNED SPACECRAFT, ABORT), WIND TUNNEL MODELS, LAUNCH VEHICLES(AEROSPACE), SPACE FLIGHT, DELTA WINGS, SUPERSONIC CHARACTERISTICS, STABILITY IDENTIFIERS: SPACE SHUTTLES (U)  
(U)

Wind tunnel tests were conducted to determine the dynamic and static stability derivatives of an approximately 0.011-scale North American Rockwell straight wing and delta wing orbiters in proximity with an 0.011-scale General Dynamics/Convair delta wing booster. Interference-free data on the orbiter models were also obtained. Measurements were made with a forced-oscillation dynamic balance as the model oscillated plus or minus 1.6 deg at angles of attack ranging from -6.8 to 9.7 deg. Data were obtained at Mach numbers 1.76 and 2 and at free-stream Reynolds numbers, based on orbiter model length, ranging from 2,030,000 to 6,330,000. Gain orbiter configurations were dynamically and statically stable, and in general, not greatly affected when in the proximity of the booster. The present coupling data show fair agreement with data from the National Aeronautics Establishment (NAE), which are the only other known coupling data of this type. (Author) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 720 882 11/2

GRUMMAN AEROSPACE CORP BETHPAGE N Y RESEARCH DEPT

Development of Beta-Spoudumene Closed Pore Insulation (CPI).

(U)

DESCRIPTIVE NOTE: Research memo.,  
SEP 71 36P Stanislaw, T. S.;  
REPT. NO. RW-517  
MONITOR: CIDEP 501.30.00.00-K4-03

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SPOUDUMENE, \*POROUS MATERIALS),  
(\*REFRACTORY MATERIALS, SPOUDUMENE), (\*HEAT SHIELDS,  
SPOUDUMENE), CERAMIC MATERIALS, THERMAL INSULATION,  
REENTRY VEHICLES, FORMS, SILICATES, ALUMINATES, DENSITY,  
MECHANICAL PROPERTIES, PHASE DIAGRAMS, MANUFACTURING  
METHODS  
IDENTIFIERS: SPACE SHUTTLES (U)  
(U)

IAC ACCESSION NUMBER: NAC-081080  
IAC DOCUMENT TYPE: NAC -HARD COPY--

An investigation was conducted to develop a refractory 2300F water-proof external insulation for the earth orbiting shuttle. Using beta-spodumene as the matrix material, both organic (fugitive) and inorganic pore formers, as well as foaming by means of chemical reaction and the use of a surfactant, were tried over a wide range of composition, processing conditions, and geometries to obtain the desired properties. When pore formers were used, densities obtained on specimens less than 1 inch in diameter were not duplicated on larger sized specimens. Pores were weak, difficult to handle, and exhibited migration to the surface of what is believed to be binder material and other additives. A material was not obtained that possessed all of the desired properties.  
(Author)

IAC SUBJECT TERMS: M--(U)HOPKINSON BAR, ALUMINUM, STRAIN-RATE, 1100-C;  
(U)

AD- 731 563

UNCLASSIFIED

PAGE

172

AD- 729 882

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 720 882 11/2

GRUMMAN AEROSPACE CORP BETHPAGE N Y RESEARCH DEPT

Development of Beta-Spoudumene Closed Pore Insulation (CPI).

(U)

DESCRIPTIVE NOTE: Research memo.,  
SEP 71 36P Stanislaw, T. S.;  
REPT. NO. RW-517  
MONITOR: CIDEP 501.30.00.00-K4-03

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SPOUDUMENE, \*POROUS MATERIALS),  
(\*REFRACTORY MATERIALS, SPOUDUMENE), (\*HEAT SHIELDS,  
SPOUDUMENE), CERAMIC MATERIALS, THERMAL INSULATION,  
REENTRY VEHICLES, FORMS, SILICATES, ALUMINATES, DENSITY,  
MECHANICAL PROPERTIES, PHASE DIAGRAMS, MANUFACTURING  
METHODS  
IDENTIFIERS: SPACE SHUTTLES (U)  
(U)

IAC ACCESSION NUMBER: NAC-081080  
IAC DOCUMENT TYPE: NAC -HARD COPY--

An investigation was conducted to develop a refractory 2300F water-proof external insulation for the earth orbiting shuttle. Using beta-spodumene as the matrix material, both organic (fugitive) and inorganic pore formers, as well as foaming by means of chemical reaction and the use of a surfactant, were tried over a wide range of composition, processing conditions, and geometries to obtain the desired properties. When pore formers were used, densities obtained on specimens less than 1 inch in diameter were not duplicated on larger sized specimens. Pores were weak, difficult to handle, and exhibited migration to the surface of what is believed to be binder material and other additives. A material was not obtained that possessed all of the desired properties.  
(Author)

IAC SUBJECT TERMS: M--(U)HOPKINSON BAR, ALUMINUM, STRAIN-RATE, 1100-C;  
(U)

AD- 731 563

UNCLASSIFIED

PAGE

172

AD- 729 882

UNCLASSIFIED

ZOM07

(U)

DESCRIPTIVE NOTE: Final rept. Jul 70-Jul 71,  
SEP 71 243P DiFranco, Dante A.;  
Y. T. H. John F. I.  
REPT. NO. CAL-8M-2995-F-1  
CONTRACT: F33615-70-C-1753  
FROM: AF-690A  
MONITOR: AFEDL TR-71-64

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DESCENT TRAJECTORIES, SPECIFICATIONS),  
(\*LIFTING REENTRY VEHICLES, ATMOSPHERE ENTRY), MANNED  
SPACECRAFT, RENDEZVOUS SPACECRAFT, FLIGHT CONTROL  
SYSTEMS, ANGLE OF ATTACK, AERODYNAMIC CHARACTERISTICS,  
METEOROLOGICAL PHENOMENA, FLIGHT PATHS, QUALITY CONTROL,  
PRESSURE PATTERN FLIGHT, NONPOWERED FLIGHT, AERONAUTICS  
IDENTIFIERS: \*SPACE SHUTTLES (U)  
(U)

Preliminary handling qualities requirements for lifting re-entry vehicles during terminal flight at low supersonic, transonic, and subsonic speeds are presented and discussed. Included are a preliminary draft of a flying qualities specification for piloted re-entry vehicles and the rationale and backup data upon which the flying qualities requirements are based. Many of the requirements were adapted from, or are similar to, the requirements for piloted airplanes presented in the latest revision of the flying qualities specification for military airplanes, MIL-F-8785B(ASG). Some requirements that are new and unique to lifting re-entry vehicles have been added. The format of the specification is similar to that of MIL-F-8785B(ASG), therefore, comparison of flying qualities requirements of lifting re-entry vehicles and airplanes is facilitated. These flying qualities requirements are preliminary and subject to revisions based on future research and additional discussions with interested contractors and government agencies. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 729 770 22/2

RAND CORP SANTA MONICA CALIF

The Space Shuttle as an Element in the  
National Space Program.

(U)

OCT 70 43P Shaver, R. D. ; Dreyfuss, D.  
J. ; Gosch, W. D. ; Levenson, G. S. ;  
REPT. NO. RM-6244-1-PR  
CONTRACT: F44620-67-C-0345

UNCLASSIFIED REPORT

DESCRIPTORS: (\*RENDEZVOUS SPACECRAFT, TRANSPORTATION),  
(\*RECOVERABLE BOOSTER MOTORS, COST EFFECTIVENESS),  
LAUNCH VEHICLES(AEROSPACE), FEASIBILITY STUDIES, COSTS,  
BUDGETS, POLAR ORBIT TRAJECTORIES, MANAGEMENT PLANNING,  
SYSTEMS ENGINEERING (U)  
IDENTIFIERS: \*SPACE SHUTTLES, SPACE PROGRAMS, SPACE  
TRANSPORTATION SYSTEMS, STS(SPACE TRANSPORTATION  
SYSTEMS), COST ANALYSIS (U)

An examination is made of the economic  
justification and potential funding problems of the  
space transportation system (STS) recommended for  
development by the President's Space Task  
Group in September 1969. The concept of a two-  
stage, fully reusable launch vehicle that can place a  
40,000 to 50,000-lb payload into low earth polar  
orbit is currently being studied for possible  
inclusion in future STS programs. Viewed over the  
long term, the shuttle has definite merit, but its  
immediate economic justification depends on the pace  
that is finally adopted for the national space  
program. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 724 113 22/1 17/7

AEROSPACE RESEARCH LABS WRIGHT-PATTERSON AFB OHIO

Optimal Control of Libration Point Space  
Station.

(U)

DESCRIPTIVE NOTE: Final rept.,  
JAN 71 15P  
Isaac R. ; Soward, Walter D. ;  
REPT. NO. AR-71-0316  
PROJ: AF-7071  
TASK: 707100

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SPACE STATIONS, ADAPTIVE CONTROL  
SYSTEMS), (\*SPACE NAVIGATION, N-BODY PROBLEM,  
EARTH(PLANET), MOON, SUN, EQUATIONS OF MOTION, NONLINEAR  
SYSTEMS, OPTIMIZATION, FEEDBACK (U)  
IDENTIFIERS: LIBRATIONS, LIBRATION POINTS, AUTOMATIC,  
CONTROL, FOUR BODY PROBLEM, CONTROL THEORY (U)

The report covers the development of a control  
system which maintains a space station in close  
proximity to one of the earth-moon libration points.  
(Author) (U)

AD- 729 770

UNCLASSIFIED

PAGE

173

AD- 724 113

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 721 971 14/2 20/4 1/1

NATIONAL AERONAUTICAL ESTABLISHMENT OTTAWA (ONTARIO)

On Dynamic Stability Testing of  
Unconventional Configurations.

(U)

71 1+P Orlik-Ruckemann, K. J. ;  
Adams, P. A. ; LaBerge, J. G. ;

UNCLASSIFIED REPORT

Availability: Paper copy available from AIAA, 1290  
Avenue of the Americas, New York, N. Y. 10019.  
PC \$2.00 MF \$1.00. No copies furnished by DDC or  
NTIS.

SUPPLEMENTARY NOTE: Pub. in Proceedings of the AIAA  
Aerodynamic Testing Conference (6th) Albuquerque,  
New Mexico, 10-12 Mar 71. AIAA Paper No. 71-276.

DESCRIPTORS: (\*WIND TUNNELS, \*AERODYNAMICS), WIND TUNNEL  
MODELS, STABILITY, OSCILLATION, AERODYNAMIC  
CONFIGURATIONS, ANGLE OF ATTACK, EXPERIMENTAL DATA (U)  
IDENTIFIERS: SPACE SHUTTLES, \*STING MOUNTS (U)

Situations frequently occur when standard wind-  
tunnel test equipment, based on the concept of an  
all-containing rear-sting support is impractical or  
even impossible to use. In this paper some possible  
alternative test arrangements are indicated and  
descriptions are given of the actual experimental  
equipment and procedures. Full- and half-model  
techniques are discussed and the experimental  
procedures include free- and forced-oscillation  
methods. Examples contain cases such as cones at  
incidence and combinations of two models in close  
proximity (space shuttle), at supersonic and  
hypersonic speeds. Comparisons of results obtained  
with different methods and techniques are included.  
(Author)

(U)

AD- 721 971

UNCLASSIFIED

PAGE

174

AD- 721 713

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 721 713 5/5 6/11

BIOTECHNOLOGY INC FALLS CHURCH VA

Forecast of Human Factors Technology Issues  
and Requirements for Advanced Aero-Hydro-  
Space Systems.

(U)

DESCRIPTIVE NOTE: Final rept.,

MAR 71 343P Price, Harold E. ; Parker,  
James F. , Jr. ;

CONTRACT: N00014/69-C-0327  
PROJ: NR-145-258

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SPACECRAFT, \*HUMAN FACTORS ENGINEERING),  
(\*SUPERSONIC AIRCRAFT, HUMAN FACTORS ENGINEERING),  
(\*UNDERWATER VEHICLES, HUMAN FACTORS ENGINEERING),  
AIRCRAFT, SPACE BIOLOGY, HUMANS, PERFORMANCE (HUMAN),  
ENVIRONMENT, AERONAUTICS, OPERATION, UNDERWATER, SPACE  
ENVIRONMENTS, STRESS (PHYSIOLOGY), STRESS (PSYCHOLOGY),  
LIFE SUPPORT

(U)

IDENTIFIERS: \*SPACE SHUTTLES, \*HABITABILITY,  
\*UNDERWATER

(U)

Three major new systems planned for the 1970s have  
been examined: the supersonic transport, the space  
shuttle, and undersea systems, covering both  
underwater habitats and deep sea submersibles. The  
operation of these systems and the proposed  
utilization of man within each system have been  
described in detail. Specific issues relating to  
the use of man have been discussed. Finally,  
research requirements have been recommended that  
should receive emphasis if appropriate human factors  
and biomedical technology is to be developed to  
support the full spectrum of advanced systems to be  
developed within the next decade. (Author)

(U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 720 136 22/1 7/1

CALIFORNIA UNIV LOS ANGELES DEPT OF CHEMISTRY

Industrial Chemistry; in Space, (U)

MAR 70 5P Libby, W. F. ; Payton, P.

H. ;  
CONTRACT: AF-AFOSR-1255-67, NGL-05-007-003  
PROJ: AF-9538

MONITOR: AFOSR TR-71-0595

## UNCLASSIFIED REPORT

Availability: Pub. in Proceedings of the ASME  
Space Technology and Heat Transfer Conference,  
Los Angeles, Calif. 21-24 Jun 70. 70-AV/Spt-  
2. 5p.DESCRIPTORS: (\*CHEMICAL ENGINEERING, \*SPACE STATIONS),  
(\*SOLAR FURNACES, SPACE STATIONS), CRYSTAL GROWTH,  
METALLURGY, ASTRONAUTICS (U)Some aspects of chemical manufacture in an orbiting  
spacecraft are presented and discussed. The design  
and operation of a 100-meter-dia parabolic solar  
furnace is considered. Some further subjects of  
future chemical interest are also presented.  
(Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 704 045 22/2 21/3

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

SCIENTIFIC RESULTS FROM THE FLIGHT OF YANTAR  
AUTOMATIC IONOSPHERIC LABORATORIES. PART II, (U)JAN 70 16P Artsimovich, L. A. ;  
Grodzovskii, G. K. ; Denilov, Yu. I. ; Zakharov,  
V. M. ; Krut'sev, N. F. ;  
REPT. NO. FTD-HT-23-637-69  
PROJ: FTD-41602

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited trans. of mono. Nauchnye  
Rezultaty Poleta Avtomaticheskikh Ionosfernykh  
Laboratorii 'Yantar'. Ch. 2, n.p., 1968 p1-11, by  
D. Koolbeck.DESCRIPTORS: (\*SPACE STATIONS, SPACE PROPULSION),  
(\*ELECTRIC PROPULSION, FEASIBILITY STUDIES),  
(\*PLASMA PHYSICS), USSR, ION ENGINES, INTERACTIONS,  
ROCKET LABORATORIES, EXPERIMENTAL DATA, REPORTS  
IDENTIFIERS: TRANSLATIONS (U)  
(U)To investigate the prospects of controlled flight  
in the upper atmosphere, 'Yantar' automatic  
ionospheric laboratories with gas plasma ion engines  
were launched by means of geophysical rockets to  
altitudes of 100-400 km. The complicated  
interaction of a gas ion jet and a neutralizer  
(electron emitter) with the plasma of the  
ionosphere is studied. The data from processing the  
results obtained in the experiments are given in the  
report. (U)

AD- 720 136

UNCLASSIFIED

PAGE

175

AD- 704 045

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 702 322 22/1 22/2

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

SPACE OBSERVATIONS: SCIENCE PUSHES BACK ITS HORIZONS, (U)

DEC 69 9P Efremov, A. ; Zaitsev, Yu. ;  
 Mikhailov, V. ;  
 REPT. NO. FTD-HT-23-591-69  
 PROJ: FTD-7220157

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited trans. from Pravda, Moscow (USSR) p3, 24 Oct 69.

DESCRIPTORS: (\*SPACE STATIONS, SPACE ENVIRONMENTS), MAN-MADE, PHOTOMETERS, ULTRAVIOLET RADIATION, X RAYS, USSR (U)

IDENTIFIERS: SOYUZ SPACECRAFT, TRANSLATIONS (U)

It has long been the dream of scientists to place a laboratory outside the planet for the purpose of observing the phenomena of the Universe unhampered by the interference of the Earth's atmosphere. In the group flight of the 'Soyuz' ('Union') spacecraft an important link has been forged in the realization of this dream. The article tells of research with an, as-yet-unpiloted, observatory which has carried out the first all-around studies of vacuum ultraviolet and soft X-ray radiation in space. (Author) (U)

AD- 702 322

UNCLASSIFIED

PAGE

176

AD- 635 043

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 695 043 22/2 22/3

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

OPTIMUM FEEDBACK CONTROL OF A SYNODIC SATELLITE. (U)

DESCRIPTIVE NOTE: Master's thesis,  
 JUN 69 101P Seward, Walter D. ;  
 REPT. NO. GOC/EE/69-17

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*SYNCHRONOUS SATELLITES, SPACE STATIONS), (\*SPACE STATIONS, FUEL CONSUMPTION), (\*FUEL CONSUMPTION, OPTIMIZATION), ADAPTIVE CONTROL SYSTEMS, DESIGN, CALCULUS OF VARIATIONS, FEEDBACK, GAIN, EQUATIONS OF MOTION, PARKING ORBIT TRAJECTORIES, PERFORMANCE (ENGINEERING), N-BODY PROBLEM, LINEAR SYSTEMS, STABILITY, COSTS, THESES (U)  
 IDENTIFIERS: COMPUTER ANALYSIS, LIBRATION POINTS, \*STATIONKEEPING (U)

A control system is devised to minimize the fuel required to maintain a satellite at the three-body libration point between the earth and moon bodies in the planar very restricted four-body model. The problem is formulated as a linear regulator problem of variational calculus for equations of motion linearized about the libration point. The solution yields a linear feedback control system that is optimal with respect to a quadratic performance criterion. A matrix Riccati equation is solved to obtain the feedback gains. The control system is extended to include the nonlinear system dynamics with the steady-state feedback gains of the linear problem. The performance of the resulting control system is analyzed on a digital computer. (U)

(U)

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 688 266 22/1 22/2 5/5

GENERAL DYNAMICS/CONVAIR SAN DIEGO CALIF

ASSEMBLY AND MAINTENANCE OF LIGHTWEIGHT METALLIC  
STRUCTURES IN SPACE. (U)

DESCRIPTIVE NOTE: Final rept. Feb 67-Jul 68,

MAR 69 126P Brazell, Robert R. ;Thomson,

W. G. ;

CONTRACT: F33615-67-C-1302

PROJ: AF-8170

TASK: 817008

MONITOR: AFAPL TR-68-118

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*SPACE MAINTENANCE, \*HUMAN FACTORS  
ENGINEERING), SPACE STATIONS, CONSTRUCTION,  
WEIGHTLESSNESS, CONFIGURATION, MISSION PROFILES, MANNED  
SPACECRAFT, TEST FACILITIES, PANELS, EXTRAVEHICULAR  
ACTIVITY, WALLS, PIPES, WIRE, FATIGUE(PHYSIOLOGY),  
ASSEMBLY (U)

IDENTIFIERS: PLATES(STRUCTURAL MEMBERS) (U)

The research described herein was intended to  
expand the base of knowledge about man's capability  
to handle structural components and to assemble them  
into a usable structure in the space environment.  
Emphasis was placed on structures consisting of  
tubular supporting elements and large surface panels.  
Separate test activities were conducted to provide  
basic information for spacecraft designers and  
mission planners. Optimum, minimum, and maximum  
sizes and masses for both tubular elements and flat  
plates were determined. Data were derived  
empirically, using Convair's large six-degree-of-  
freedom simulator and neutral buoyancy simulation  
techniques. Extensive biononitoring was carried  
out during testing, on a variety of subjects.  
(Author) (U)

AD- 688 266

UNCLASSIFIED

PAGE

177

AD- 688 246

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 688 246 22/1

AIR FORCE AERO PROPULSION LAB WRIGHT-PATTERSON AFB  
OHIONATIONAL CONFERENCE ON SPACE MAINTENANCE AND  
EXTRAVEHICULAR ACTIVITIES (2ND). 6-8 AUGUST  
, 1968, LAS VEGAS, NEVADA. (U)

FEB 69 717P

PROJ: AF-3170

TASK: 817012

## UNCLASSIFIED REPORT

DESCRIPTORS: (\*SPACE MAINTENANCE, SYMPOSIA),  
(\*EXTRAVEHICULAR ACTIVITY, SYMPOSIA), MANNED SPACECRAFT,  
SPACE STATIONS, ANTENNAS, LUNAR CRAFT, SPACECRAFT  
DOCKING, MAN MACHINE SYSTEMS, LIFE SUPPORT, SAFETY,  
PERFORMANCE(HUMAN), MANEUVERABILITY (U)  
IDENTIFIERS: APOLLO, GEMINI (U)

Contents: Space maintenance and EVA/space  
missions; Spacecraft maintainability and  
reliability; Related man-machine interface  
problems; Space maintenance technology;  
Maneuvering-unit technology; Protective systems;  
and Associated space experiments and  
simulation. (U)

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 687 326 6/16 11/6 22/2 17/2.1

LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY DIV

FOREIGN SCIENCE BULLETIN, VOLUME 5, NUMBER 4, APRIL 1969. (U)

DESCRIPTIVE NOTE: A monthly review of selected foreign scientific and technical literature.  
 APR 69 245P

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Volume 5, no. 3, AD-684 876. Also available on subscription, \$18.00/year, \$22.50/year foreign.

DESCRIPTORS: (\*ELECTROPHYSIOLOGY, REVIEWS). (\*POWDER METALLURGY, \*ALUMINUM), (\*SPACECRAFT, REVIEWS), (\*MICROWAVE COMMUNICATIONS, MOUNTAINS), ELASTIC PROPERTIES, PLASTIC PROPERTIES, CENTRAL NERVOUS SYSTEM, STRESSES, INDUSTRIES, PHOTOTUBES, ALLOYS, OPTICS, SPACE STATIONS, SATELLITES(ARTIFICIAL), WAVE PROPAGATION, USSR  
 IDENTIFIERS: ELECTROANESTHESIA, ELECTROSLEEP (U)  
 (U)

Contents. Papers: Electrosleep (cerebral electrotherapy) and electroanesthesia - the International effort at evaluation; Microwave propagation in mountainous terrain; Soviet sintered aluminum powder (SAP) alloys; Soviet orbital assembly technology; Kosmos satellite launches during 1958. Surveys: Investigation of stress concentration by means of the couple-stress theory; Investigations of strength and plasticity at the Institute of Mechanics, Academy of Sciences USSR; VEB Carl Zeiss Jena. Notes: A photodetector with a virtual cathode; Kosmos-261 progress report; Research activity at Soviet Higher Educational Institutions. Conferences: Second International Symposium on Electrosleep and Electroanesthesia. Book reviews: Equations of State of Solids at High Pressures and Temperatures; Information Storage and Retrieval in Chemistry and Chemical Technology. (U)

AD- 687 326

UNCLASSIFIED

PAGE

178

AD- 683 158

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 683 158 22/2

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

PEOPLE AND SPACE, (U)

AUG 68 13P Pokrovskii, G. ;  
 REPT. NO. FTC-HT-23-675-68

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited trans. of Voennye Znaniya (USSR) v43 no p36-37 1967, by L. Thompson.  
 DESCRIPTORS: (\*SPACE STATIONS, REVIEWS), FEASIBILITY STUDIES, CENTRIFUGAL FIELDS, SPACE MAINTENANCE, CONSTRUCTION, MIRRORS, FILMS, PNEUMATIC DEVICES, USSR  
 IDENTIFIERS: TRANSLATIONS (U)  
 (U)

A popularized discussion is given of the prospects and proposals for a manned orbiting space station. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 679 660 22/3

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

THE SYNTHESIS OF A SYSTEM FOR OPTIMAL STABILIZATION  
OF A SPACE STATION, (U)

FEB 68 16P Letov, A. M. ;  
REPT. NO. FTD-WT-23-1281-67

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited trans. of National  
Conference on Vehicle Guidance and Control of the  
American Institute of Aeronautics and Astronautics,  
Huntsville, Ala., 14-16 Aug 67. Paper, n.p., 1967  
p1-17, by J. Miller.  
DESCRIPTORS: (\*SPACE STATIONS, STABILIZATION SYSTEMS),  
MASS, INERTIA, MOMENTUM, MATHEMATICAL MODELS, NONLINEAR  
DIFFERENTIAL EQUATIONS, STABILITY, USSR (U)  
IDENTIFIERS: TRANSLATIONS (U)

The report gives the solution to the problem of  
synthesizing a system for stabilizing a manned space  
station. The stabilization system suppresses the  
initial angular momentum of the station which it  
acquires at the moment it separates from the booster.  
Suppression occurs according to an optimal law  
which corresponds to the accepted quality factor  
(Q) no matter what the movement of the crew  
members. (Author) (U)

AD- 679 660

UNCLASSIFIED

PAGE

179

AD- 658 454

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 658 454 22/1

AIR FORCE AERO PROPULSION LAB WRIGHT-PATTERSON AFB  
OHIO

AN ASSESSMENT OF THE PRACTICALITY OF ORBITAL  
MAINTENANCE, (U)

AUG 67 23P Van Schaik, Peter N. ;  
REPT. NO. AFAPL-CONF-68-3  
PROJ: AF-8170

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the AIAA Conference on  
Space Programs Issues of the 70's, Seattle, Wash.,  
28-30 Aug 67.  
DESCRIPTORS: (\*SPACE MAINTENANCE, FEASIBILITY STUDIES),  
SPACE STATIONS, MANNED SPACECRAFT, RELIABILITY,  
REDUNDANT COMPONENTS, SYSTEMS ENGINEERING,  
MAINTAINABILITY, SPARE PARTS, EXTRAVEHICULAR ACTIVITY,  
COST EFFECTIVENESS (U)

Spacecraft and space stations orbiting the earth  
for long periods of time will incur many malfunctions  
requiring redundancy on orbital maintenance.  
Redundancy will suffice for the shorter periods  
while maintenance becomes a necessity in the long  
run. For maintenance to become a reality it must  
be both system and cost effective. It will never  
become effective unless the spacecraft is  
maintainable, spares are interchangeable, and man can  
make in-space repairs. Current programs are slowly  
advancing the technologies but a concentrated,  
comprehensive program is needed to make maintenance a  
reality reasonably soon. (Author) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 656 747 22/2 13/13

ARCHER DANIELS MIDLAND CO MINNEAPOLIS MINN

SELF-RIGIDIZING EXPANDABLE-SANDWICH AEROSPACE  
SHELTERS AND SOLAR COLLECTORS. (U)

DESCRIPTIVE NOTE: Progress rept. for 15 May 66.  
MAY 66 30P  
CONTRACT: AF 33(615)-2435

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-489 454.  
DESCRIPTORS: (\*EXPANDABLE STRUCTURES, \*SANDWICH  
CONSTRUCTION), (\*SOLAR COLLECTORS, EXPANDABLE  
STRUCTURES), (\*SPACE STATIONS, EXPANDABLE STRUCTURES),  
HONEYCOMB CORES, FEASIBILITY STUDIES, MIRRORS, PARABOLIC  
BODIES, PACKAGING, ENVIRONMENTAL TESTS, DAMAGE,  
RADIATION EFFECTS, PLASTICS (U)

The objectives of the program are: (1)  
fabrication, space deployment, and rigidification of  
a large parabolic solar collector; (2)  
fabrication and space deployment of inflatable,  
rigidizable space shelter structures. The first  
10-foot diameter mirror was completed by addition of  
the plumbing attachments to the manifold for the  
rigidization task. However, due to some slight  
leakage between the inflated sandwich and minor  
shell coat, it was decided that this unit will be  
rigidized in ambient conditions. The 4-foot  
diameter x 8-foot long cylinder was completed,  
including impregnation. However, deployment in the  
vacuum chamber was unsuccessful because the resin had  
already rigidified. (U)

AD- 656 747

UNCLASSIFIED

PAGE

180

AD- 655 342

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 655 342 22/2

RAND CORP SANTA MONICA CALIF

ORBITAL BASING: KEY TO LOW COST SPACE OPERATIONS. (U)

JUL 67 25P Sears, G. A. ;  
REPT. NO. P-3570

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SPACE STATIONS, COSTS), MANNED, RECOVERY,  
LIFE EXPECTANCY, TRAFFIC, LAUNCHING, OPERATION. (U)

A comparison is made of some of the operational and  
cost-influencing characteristics of low-orbit space  
operations conducted from a manned orbital base and  
from an earth base. The earth-based mode of  
operation is that employed today, whereby expendable  
spacecraft are placed in mission orbits with  
expendable launch vehicles. In the orbital-basing  
concept the spacecraft are based at a manned space  
station, are injected into their mission orbits as  
required, and subsequently rendezvous with the space  
station for rejuvenation and reuse. Reuse has long  
been considered the key to lowering the very high  
cost of space operations; however, most reuse  
concepts studied in depth have involved recovery to  
earth of launch vehicles and/or spacecraft. The  
reasons why development of reusable systems has not  
been initiated are many, prominent among which are  
these: (1) Very significant weight penalties  
are associated with recovery gear, particularly  
orbital recovery gear; (2) refurbishment costs  
and useful life of recovered vehicles are difficult  
to appraise; and (3) traffic rates are not  
foreseen which are adequate to amortize R and D  
costs of billions of dollars over a reasonable time  
period. These problems are all associated with  
recovery, however, and can be avoided by reuse of  
equipment on orbit. (Author) (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 647 646 22/3 22/2 21/4 21/6

LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY  
DIVSPACECRAFT UTILIZING THE LIFTING AND BALLISTIC  
REENTRY TECHNIQUES. PART I. SPACECRAFT MANEUVERING-  
AND DESCENT-SYSTEM HARDWARE: COMPILATION AND ANALYSIS  
OF EXTRACTS AND REVIEWS. (U)DESCRIPTIVE NOTE: ATD work assignment no. 52,  
JUN 66 65P Dolgich, Aleksander ; Thomas,  
Kenneth ;  
REPT. NO. ATD-66-81  
MONITOR: TT 67-61101

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Compilation and analysis of Extracts  
and Reviews is based on Soviet-Satellite-Western  
open sources pub. 1963-66. Rept. on Surveys of  
Foreign Scientific and Technical Literature.  
DESCRIPTORS: (\*SPACE PROPULSION, \*REENTRY VEHICLES),  
SPACECRAFT NUCLEAR PROPULSION, SPACE STATIONS,  
BALLISTICS, ATMOSPHERE ENTRY, LUNAR PROBES, ELECTRIC  
PROPULSION, PLASMA ENGINES, ION SOURCES, SPACE  
NAVIGATION (U)

The compilation and analysis of extracts and reviews is based on Soviet-Satellite-Western open sources published 1963-1966. This report is Part I of a two-part report. Describing various aspects of the Soviet space program, it attempts to reveal the status and trends of Soviet research and development relating to the orbiting, maneuvering, deorbiting, reentry, and recovery of aerospace vehicles utilizing aerodynamic lifting and ballistic reentry techniques. After the introduction which reviews information contained in the report, there are three sections: I. Voskhod-type descent systems; II. Materials on lunar- and planetary-probe descent systems; III. Spacecraft maneuvering systems. In Section I there are five parts: A. General discussion of reentry and landing systems; B. Excerpts from articles on reentry, braking, and landing systems; C. Materials on Voskhod-type soft-landing systems; D. Materials on Voskhod-type ion velocity-vector plotters; E. Materials on cosmonaut-recovery procedures. Section II has two parts:

AD- 647 646

## UNCLASSIFIED

PAGE

181

AD- 638 705

## UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 638 705 22/2 20/11

GIANNINI CONTROLS CORP WALVERN PA

EXPERIMENTAL INVESTIGATION OF THE EFFECTS OF  
ELASTICITY ON THE STABILITY OF MANNED ROTATING SPACE  
STATIONS. (U)DESCRIPTIVE NOTE: Revised ed.  
FEB 66 5P Villier, Jacob M. ;  
CONTRACT: AF 49(638)-1015,  
PROJ: AF-9782,  
TASK: 978201,  
MONITOR: AFOSR 66-1641

## UNCLASSIFIED REPORT

Availability: Published in Journal of Spacecraft and Rockets V3 n6 p943-5 Jun 1966.  
SUPPLEMENTARY NOTE: Revision of manuscript submitted 21 Jul 65. Prepared for presentation at the AIA Annual Meeting (2nd), San Francisco, Calif., 26-29 Jul 65.

DESCRIPTORS: (\*ELASTIC PROPERTIES, EXPERIMENTAL DATA),  
(\*SPACE STATIONS, STRUCTURAL PROPERTIES), MANNED,  
STABILITY (U)

An experimental investigation of the effects of elasticity on the stability of manned rotating space stations was conducted. The minor deviations between the results and the previously predicted analytic values are well within acceptable experimental error. The stability criterion was thus verified and designers may use it as a guide for stiffness requirements. The parameters involved are general for each configuration so that they may be applied easily. Knowledge of natural vibration modes and spin-up forces enables a structural analyst to determine whether or not his design will exhibit the instability reported by the author of this paper. (Author)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 634 931 22/1

AERONAUTICAL CHART AND INFORMATION CENTER ST LOUIS MO  
LINGUISTIC SECTION

THE FLIGHT OF AUTOMATIC INTERPLANETARY STATIONS  
'VENUS-2' AND 'VENUS-3'. (U)

MAY 66 16P  
REPT. NO. ACID-TC-1033,  
MONITOR: TT 66-61646

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Opolete Avtomaticheskikh  
Mexnplanetnykh Stantsii 'Venera-2' i 'Venera-3',  
trans. from Ekonomicheskaya Gazeta (USSR) n10 1966.  
DESCRIPTORS: (\*SPACE STATIONS, \*VENUS PROBES),  
INTERPLANETARY TRAJECTORIES, PLANETARY ATMOSPHERES,  
SPACECRAFT COMPONENTS, AUTOMATIC, VENUS(PLANT), USSR (U)

Translation of Russian articles: Flight of automatic  
interplanetary stations 'Venus-2' and 'Venus-3'.

AD- 634 931

UNCLASSIFIED

PAGE

182

AD- 631 585

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 631 585 22/2

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

STATION OUTSIDE THE EARTH, (U)

JAN 66 168P Lyapunov, B. V. ;  
REPT. NO. FTC-MT-64-531,  
MONITOR: TT 66-61106

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited machine trans. of mono.  
Stantsiya vne Zemli, Moscow 1963 p1-147.  
DESCRIPTORS: (\*SATELLITES (ARTIFICIAL), USSR), (\*SPACE,  
USSR), (\*SPACECRAFT, USSR), METEOROLOGICAL,  
COMMUNICATION SATELLITES (ACTIVE), COMMUNICATION  
SATELLITES (PASSIVE), MANNED SPACECRAFT, SPACE FLIGHT,  
EXTRATERRESTRIAL BASES, ROCKET PROPULSION,  
INTERPLANETARY TRAJECTORIES (U)  
IDENTIFIERS: COSMOS SATELLITES, ECHO, MARINER,  
TELSTAR, TIROS, VOSTOK (U)

Translation of a 1963 Russian publication on  
space stations, satellites, interplanetary routes,  
and their value for science and practical use. (U)

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 624 668 22/2 10/2 10/3

PRINCETON UNIV N J

ELECTRICAL POWER SYSTEMS FOR THE MANNED ORBITING  
LABORATORY. (U)

DESCRIPTIVE NOTE: Master's thesis,  
OCT 65 184P  
CONTRACT: AF33(608)-1269  
Anderberg, Michael R. ;

## UNCLASSIFIED REPORT

## SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*SPACE STATIONS, ELECTRIC POWER  
PRODUCTION), (\*ELECTRIC POWER PRODUCTION, SPACE  
STATIONS), (\*MANNED SPACECRAFT, POWER SUPPLIES),  
(\*POWER, SPACE STATIONS), AIR FORCE RESEARCH, MISSION,  
FUEL CELLS, SOLAR CELLS, BATTERY COMPONENTS, ELECTRIC  
BATTERIES, EXPERIMENTAL DESIGN, ENERGY CONVERSION (U)  
IDENTIFIERS: MOL(MANNED ORBITING LABORATORIES) (U)

This paper is a detailed design study of possible electrical power systems for the Air Force's Manned Orbiting Laboratory. The mission requirements and details are reviewed to the extent that they are known in the open literature and a set of power requirements is derived. On the basis of reliability, availability, and weight considerations, only solar cells, fuel cells, secondary batteries and combinations thereof are selected for detailed analysis. For the 30 day mission it is concluded that if no experiments are required during the shadow portion of the orbit, the integrated battery/solar cell system is superior by a large margin. If experiments are required in the shadow period, it is found that either the fuel cell system or the battery/solar cell system may be optimum depending on the magnitude and type of power required. It is also found that for a 60 day mission only the battery/solar cell system can be seriously considered. The analysis of the three power systems in support of the design study is developed step by step and may be used as a detailed guide for analyzing the characteristics of these systems for other missions. (Author) (U)

AD- 624 668

UNCLASSIFIED

PAGE

183

AC- 624 575

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 624 575 22/1 22/2 22/3 22/4

AEROSPACE TECHNOLOGY DIV LIBRARY OF CONGRESS WASHINGTON D  
CSOVIET SPACE EXPLORATION AS VIEWED BY EAST GERMAN  
SPECIALISTS. (U)

NOV 65 44P  
REPT. NO. ATC-65-101  
MONITOR: TT, 65-64766  
Erleman, Gerhard ;

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Comprehensive report dealing with Soviet space exploration during the period 1960-1964, based on open literature.  
DESCRIPTORS: (\*ASTRONAUTICS, USSR), LAUNCH, REENTRY VEHICLES, SPACE, MANNED SPACECRAFT, LUNAR CRAFT, LUNAR PROBES, REKREZVOUS TRAJECTORIES, SPACECRAFT DOCKING, SOFT LANDINGS, SPACE, ELECTRIC PROPULSION, COMPUTERS, LASERS, EAST GERMANY (U)

The report deals with Soviet space exploration during the last five years (1960-1964) as viewed by East German specialists. It is based on open literature available at the Aerospace Technology Division of the Library of Congress. The materials have been discussed chronologically in eight sections according to subject. Some East German sources discussed include interesting information not found in Soviet publications. The possible application of parallel connection of launch-vehicle stages (clustering) in the Vostok-type vehicle, the surrounding of a reentering spacecraft with a magnetic field (Vostok-1 and Vostok-2), and the bonding of metals and plastics by nuclear welding are considered to be among the more interesting items in this report. The introduction summarizes the materials contained in the report. Section I, General Remarks and Inferences, contains analyst's conclusions. Sections II through VIII contain a chronological review of materials. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 623 967 5/9 6/5 6/19

SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX FLIGHT  
NURSING BRANCH

CLINICAL ASPECTS OF AEROSPACE NURSING, (U)

65 4P Respini, Ellen M. ;  
MONITOR: SAM , TR-65-221

UNCLASSIFIED REPORT

Availability: Published in Aerospace Medicine  
V36 N6 P545-8 Jun 1965. Copies to DDC users  
only.SUPPLEMENTARY NOTE: Prepared for presentation at Annual  
Scientific Meeting of the Aerospace Medical  
Association 27 Apr 65.DESCRIPTORS: (\*NURSES, AEROSPACE MEDICINE), (\*SPACE,  
NURSES), EDUCATION, SPACE FLIGHT, PUBLIC, RADIATION  
HAZARDS, ASTRONAUTS, MEDICAL, PHYSICAL FITNESS,  
DIAGNOSIS(MEDICINE), HOSPITALS, SPACE STATIONS (U)

The study presents a critical evaluation of the place of the nursing profession in relation to the current state of aerospace medical investigation. It is determined that Clinical Aerospace Nursing can be categorized into four general areas of endeavor: (1) preventive and occupational health nursing, (2) adaptation to the numerous elements of by-products from aerospace investigation (usually termed 'fall-out'), (3) care of the person of the astronaut before and after flight and (4) anticipation of nursing problems to be encountered in the 0-g atmosphere of the space cabin. In order to attain proficiency in the four broad areas cited the nurse must be knowledgeable, if not proficient, in many disciplines such as physics, electronics, engineering and mathematics. She must find her way into the research laboratory and become a part of the team doing the experimentation that is to determine man's ultimate capability in space. In sum, she must acquire a creative, investigative attitude and the educational background to support that attitude. (Author)

(U)

AD- 623 967

UNCLASSIFIED

PAGE

184

AD- 622 479

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 622 479

JOHNS HOPKINS UNIV SILVER SPRING MD APPLIED PHYSICS  
LABNOTE ON DETERMINING THE OVERALL DISTANCE SCALE OF THE  
EARTH USING HIGH ALTITUDE SATELLITES, (U)JUL 64 24P Guier, W. H. ;  
REPT. NO. CF-3098  
CONTRACT: NGA62 0604C

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:  
DESCRIPTORS: (\*ORBITS, MEASUREMENT), (\*SPACE STATIONS,  
TRACKING), (\*ASTRONOMICAL GEODESICS,  
SATELLITES(ARTIFICIAL)), ERRORS, SIMULATION, HIGH  
ALTITUDE, GRAVITY, DOPPLER RADAR,  
SATELLITES(ARTIFICIAL), EARTH (U)

The note presents the results of a recently completed simulation which indicates that satellite orbits with markedly different altitudes are required to determine accurately both the zeroth order zonal harmonic (the term in the geopotential representing the total force constant of the earth) and the distance scale to be applied to tracking station radii. While the simulation presents only the results for doppler data, the analysis shows that analogous results are to be expected for range data when comparable in accuracy to the doppler data. The results indicate that data which contains biases equivalent to about 5 meters position error cannot determine independently the total mass constant and distance scale factor to better than about 2/100,000 if only satellites of about 1000 km altitude are used. However, it is shown that if one satellite of at least 3000 km altitude is included, the error would be decreased to about 5/1,000,000. Radar range data with a bias error of less than 3 meters should allow the error to be reduced to below 1/100,000 for satellites of 1000 km altitude. (Author)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 621 861

TRW SPACE TECHNOLOGY LABS REDONDO BEACH CALIF

INSTABILITY OF SPINNING SPACE STATIONS DUE TO CREW MOTION.

(U)

DESCRIPTIVE NOTE: Revised ed.,

NOV 64

6p

Thomson, W. T. ; Fung, Y. C. ;

CONTRACT: AF-AFOSR-352-63

MONITOR: AFOSR 65-2472

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Pub. in AIAA Journal V3 n6 p1082-7 Jun 1965 (Copies not available to DDC or Clearinghouse customers). Revision of manuscript submitted 4 May 64.

DESCRIPTORS: (\*SPACE STATIONS, STABILITY), SPACE CREWS, MOTION, SPACE FLIGHT, SPINNING(MOTION), EQUATIONS (U)

The stability of a spinning space station due to periodic motions of the crew is considered. It is shown by a few examples that instabilities may occur if the period of an astronaut's motion bears certain ratios to the half-period of the station's spin. For example, if he moves back and forth with a radius of a circular, planar satellite, the station will occur when the period of his motion is a half integral multiple of the station's spin. A similar condition exists for astronauts who move constant speed on circular paths daily in circumferential directions. If the masses of the moving masses are, relative to the satellite, of the larger their amplitude of motion, the larger will be the regions of instability. Generalizations are given which are useful for analyzing other modes of crew motion of for other problems such as passive damping of a spinning satellite. (Author)

(U)

AD- 621 861

UNCLASSIFIED

PAGE

185

AD- 620 865

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 620 866

GIANNINI CONTROLS CORP WALVERN PA ASTRONAUTICS RESEARCH DIV

EXPERIMENTAL INVESTIGATION OF THE EFFECTS OF ELASTICITY ON THE STABILITY OF MANNED ROTATING SPACE STATIONS.

(U)

DESCRIPTIVE NOTE: Technical rept.,

JUN 65

33p

Willner, Jacob M. ; Fruen, Frank

CONTRACT: AF49 638 1015

MONITOR: AFOSR 65-104

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*SPACE STATIONS, STABILITY), (\*MANNED SPACECRAFT, STABILITY), ELASTIC PROPERTIES, ROTATION, DYNAMICS, STRUCTURAL PROPERTIES, CONFIGURATION, VIBRATION, MATHEMATICAL ANALYSIS, EXPERIMENTAL DATA, MODEL TESTS

(U)

The report presents the results and conclusions obtained from an experimental program investigating the structural dynamic stability of an elastic model of a manned rotating space station. Stability criteria for this aerospace configuration were theoretically derived and model tests were performed to substantiate these stability criteria and to demonstrate that an elastic instability of such configurations is possible. (Author)

(U)

**F/G 22/2**

DTIC/RIE/80-02

**ML**

3-1F 4  
AU  
659,300

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 620 625

SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX PHYSIOLOGY  
BRANCH

DISSOLVED NITROGEN AND BENDS IN OXYGEN/NITROGEN  
MIXTURES DURING EXERCISE AT DECREASED PRESSURES, (U)

65 8P Degner, Eugene A. ; Ikels,  
Kenneth G. ; Allen, Thomas H. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Pub. in Aerospace Medicine v36 n5  
p418-25 May 1965 (Copies not available to DDC or  
Clearinghouse customers).

DESCRIPTORS: (\*AEROSPACE MEDICINE, DECOMPRESSION  
SICKNESS). (\*DECOMPRESSION SICKNESS, AEROSPACE  
MEDICINE). SPACE STATIONS, MANNED, SIMULATION, OXYGEN,  
NITROGEN, PRESSURE BREATHING, FLIGHT SIMULATORS,  
PRESSURE SUITS, EXERCISE(PHYSIOLOGY), CHROMATOGRAPHIC  
ANALYSIS, BLOOD ANALYSIS, STRESS(PHYSIOLOGY) (U)  
IDENTIFIERS: MOL(MANNED ORBITING LABORATORIES) (U)

Four types of simulated orbiting laboratory flights  
of 10 to 21 hours' duration, involving 107 man-  
flights and 93 analyses of N2 dissolved in blood,  
were performed for the purpose of ascertaining the  
average intensity and duration of bends pains.  
Generally bends occurred most often during transfer  
and reconnaissance. Once bends appeared it  
reoccurred in subsequent flight stages. This can  
be avoided by sufficient breathing of O2 such that  
blood N2 falls to levels insufficient,  
theoretically, to provide enough N2 molecules to  
form seed bubbles. On this basis it can be  
predicted that missions in a pure O2 environment  
require 120 minutes of O2 breathing at 14.5 psia  
before decompression to 5 psia and an additional 375  
minutes before a second decompression to 3.5 psia.  
At that time one could return to 5 psia O2 or  
preferably to 46:50::O2:N2 at 7 psia; the  
latter takes 33 minutes of O2 breathing before  
recommencing at 3.5 psia. If pressure suits and  
locks operated successfully at 5 instead of 3.5 psia,  
O2 breathing time could be saved and danger of  
bends avoided. (Author) (U)

AD- 620 625

UNCLASSIFIED

PAGE

186

AD- 615 665

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 615 665

DOUGLAS AIRCRAFT CO INC SANTA MONICA CALIF MISSILE AND  
SPACE SYSTEMS DIV

RADIATION PROTECTION FOR MANNED ORBITING SPACE  
STATIONS, (U)

SEP 64 85P Jordan, T. M. ; Koprowski, E. F. ;  
Langley, R. W. ;  
REPT. NO. SM-46257

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:  
DESCRIPTORS: (\*SPACE STATIONS, SHIELDING), (\*SHIELDING,  
SPACE ENVIRONMENTS), SOLAR FLARES, PROTONS, ELECTROM,  
BREMSSTRAHLUNG, TRANSPORT PROPERTIES, COSMIC RAYS,  
PROGRAMMING (COMPUTERS), SECONDARY EMISSION, MATERIALS,  
ALUMINUM, GRAPHICS, SPHERES, MANNED SPACECRAFT, (U)  
RADIATION DOSAGE

Reported are the results of a detailed parametric  
investigation of radiation shielding requirements for  
first generation manned orbiting space stations.  
The radiation sources considered were: trapped  
protons, trapped electrons (natural and  
artificial) and associated bremsstrahlung, and  
solar flare protons. Basic shielding data is  
presented for the above radiation sources for  
spherical shield configurations. This data is  
included because of its general applicability to a  
variety of shield configurations. These results  
are presented for circular orbits of 100, 200, 400,  
and 600 nautical mile altitudes and 28.7, 45, 60, and  
90 degree inclinations. In addition, data are  
presented for extrapolation of the presented data to  
other altitudes. Two specific space stations were  
studied. The shielding analysis was based on the  
actual vehicle geometry, including onboard equipment  
and supplies, and included self shielding effects of  
a typical crew member represented by two elliptical  
cylinders. Typical results are presented for the  
dose received by various critical organs for several  
of the circular orbits mentioned above. (Author) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 615 230

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

COLONIZING OUTER SPACE.

(U)

APR 65 13P Lyapunov.B. ;

REPT. NO. FTD-TT-64-1181

MONITOR: TT, 65-62230

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Unedited rough draft trans. of  
Krylya Rodiny (USSR) v15 n8 p23-4 1964.

DESCRIPTORS: (\*SPACECRAFT, MAINTAINABILITY), SPACECRAFT  
CABINS, EXTERRESTRIAL BASES, MANNED SPACECRAFT,  
SATELLITES (ARTIFICIAL), USSR (U)

The problems encountered in the establishment of  
extraterrestrial stations, manned orbiting stations,  
and other 'dwellings in ether' are treated. The  
problems include gravity, weightlessness, food,  
communication with the earth, solar energy, dangers  
from radiation and meteors, and construction  
materials. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 615 165

RAND CORP SANTA MONICA CALIF

A MATHEMATICAL MODEL OF SUPPLY SUPPORT FOR SPACE  
OPERATIONS. (U)

DESCRIPTIVE NOTE: Memo..

APR 65 28P Freeman,Raoul J. ;Gogenty,  
David C. ;Graves,Glenn W. ;Brooks,Robin B.

S. ;

REPT. NO. RM-4520-PR

CONTRACT: AF49 638 70018

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Rept. on Proj. RAND.  
DESCRIPTORS: (\*MATHEMATICAL MODELS, LOGISTICS),  
(\*EXTRATERRESTRIAL BASES, LOGISTICS), (\*SPACE STATIONS,  
LOGISTICS), (\*LOGISTICS, MATHEMATICAL MODELS),  
SCHEDULING (U)

The Memorandum develops a methodology to evaluate  
various aspects of logistics supply support of space  
bases. It is assumed that there exists at the  
space base a schedule of operations which reflects  
the day-to-day living, build-up, and scientific  
experimental activities that are to be carried on.  
These activities, in turn, set a series of demands  
or requirements for products over a time spectrum.  
The supply system must deliver products so as to  
meet the amounts and times of the product  
requirements. Each product or module has an  
earliest and latest time by which it must be  
delivered. The model plans a series of trips, the  
dates at which each is to be sent, and the  
composition of the cargoes on each trip which satisfy  
the series of requirements over a time spectrum  
imposed by the activities at the space base. The  
series of trips are an expression of an efficient  
plan which simultaneously considers demands for  
different products at different future times and  
observes the various constraints of the system  
(e.g., cargo capacity of spaceships). The  
scheduling model can be used in two different  
modes: as part of a control system for an actual  
space base, or as a planning tool to aid in the  
design of a space base and the formulation of  
operations schedules. (U)

AD- 615 230

UNCLASSIFIED

PAGE

187

AD- 615 165

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 613 081

NORTH AMERICAN AVIATION INC DOWNEY CALIF SPACE AND  
INFORMATION SYSTEMS DIVTRANSIENT DYNAMIC RESPONSE OF ORBITING SPACE  
STATIONS. (U)MAY 64 363P Tai, C. L. ; Andrew, L. V. ;  
Loh, M. M. H. ; Kamrath, P. C. ;

REPT. NO. SID-64-43

CONTRACT: AF33 657 10219

PROJ: 1370

TASK: 137008

MONITOR: AFFDL, IDEP TDR-64-25,347.95.00.00-FL-

28

## UNCLASSIFIED REPORT

## SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*ASTRONAUTICS, SPACE STATIONS), (\*SPACE STATIONS, STRUCTURAL PROPERTIES), (\*CELESTIAL MECHANICS, SPACE STATIONS), SPACE ENVIRONMENTS, ORBITS, MANNED SPACECRAFT, AERODYNAMIC CHARACTERISTICS, AERODYNAMIC CONFIGURATIONS, EXPERIMENTAL DATA, GRAPHICS (U)

The dynamic responses of thirteen selected configurations, composed of two to three interconnected compartments and subjected to various applied disturbances, were investigated first by approximate exploratory analyses to determine the significant configurations for space stations and the relative significance of transient inputs to each configuration. Then detailed analyses of ten selected combinations of configurations and forcing functions were carried out in depth. In addition, because of the unique dynamic response problems of the cableconnected configuration, the Y-configuration and the Hconfiguration of space stations subjected to the influence of the gravitational gradient and elastic effects, separate detailed analyses of these configurations were conducted. (Author) (U)

AD- 613 081

UNCLASSIFIED

PAGE

188

AD- 612 048

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 612 048

LOCKHEED MISSILES AND SPACE CO SUNNYVALE CALIF

A THEORETICAL METHOD FOR PRECISION RENDEZVOUS  
STATION-KEEPING. (U)

DESCRIPTIVE NOTE: Revised ed.

DEC 64 24P

REPT. NO. LMSC-6-62-64-23 Eliason, D. W. ;

## UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Revision of rept. dated 31 Oct 63, rept. no. SA/62-43/2308.

DESCRIPTORS: (\*RENDEZVOUS GUIDANCE, SPACECRAFT), (\*ASTRONAUTICS, RENDEZVOUS GUIDANCE), (\*SPACECRAFT, RENDEZVOUS GUIDANCE), RENDEZVOUS SPACECRAFT, RENDEZVOUS TRAJECTORIES, SPACE STATIONS, NAVIGATIONAL AIDS, OPTICAL SCANNING, ANALOG SYSTEMS, SYSTEMS ENGINEERING, FEASIBILITY STUDIES, THEORY (U)

A method is proposed for maintaining two or more space vehicles in relatively close proximity on orbit without attachment over long periods of time. The proposed system employs a guidance and control configuration normally expected to be present in piloted rendezvous space vehicles as well as a precision optical device. The system is based on the creation of an on-board analogue of the target-vehicle motion. This is possible because of the linearity of the equations of motion with respect to the initial conditions. The on-board analogue is related to the target-vehicle system by a scale factor. The optical device is similar in some respects to devices proposed by several investigators for 'purely gravitational orbit' guidance. This study describes the possible application of such a sensor in deriving accurate relative velocity information for stationkeeping. The characteristics of the device required for system feasibility are discussed and the operational sequence of the technique is described. (Author) (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 609 501

MITRE CORP BEDFORD MASS

VULNERABILITY OF MANNED ORBITAL COMMAND POSTS TO  
NATURAL SPACE RADIATIONS. (U)

NOV 64 82P French, F. W. ; Hansen, K. F. ;  
REPT. NO. Mitre TM-4073  
CONTRACT: AF19 628 2390  
PROJ: 611.1  
MONITOR: ESD , TDR64 164

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*MANNED SPACECRAFT, SHIELDING),  
(\*SHIELDING, MANNED SPACECRAFT), (\*SPACE ENVIRONMENTS,  
MILITARY SATELLITES), (\*RADIOBIOLOGY, SPACE  
ENVIRONMENTS), MILITARY OPERATIONS, COMMAND AND CONTROL  
SYSTEMS, SPACE STATIONS, ORBITS, VULNERABILITY, VAN  
ALLEN RADIATION BELT, SOLAR RADIATION, SPACE CREWS,  
RADIATION TOLERANCE, DOSE RATE, MODELS (SIMULATION),  
MATHEMATICAL ANALYSIS (U)

The shielding requirements for the protection of  
the crew of a manned orbital command post against the  
natural space radiations are investigated. Two  
types of orbits of military importance and of wide  
applicability are considered--a long-duration, high-  
altitude orbit above the Van Allen Belt and a  
short-duration, low-altitude polar orbit below it.  
Model environments for both orbits in terms of  
solar flare, cosmic, and Van Allen Belt  
radiations are postulated. Radiobiological  
tolerance criteria are investigated, and a somewhat  
unique criteria, based on partial recovery of  
sustained somatic damage, is proposed for the long  
duration mission. A mathematical description of  
the radiation transport of the separate environmental  
components through the radiation shield is  
formulated. Appropriate simplifications are used to  
obtain expressions for the doses due to primary  
protons, secondary protons and neutrons, and  
bremsstrahlung. Calculations are carried out on  
the IBM 7030 computer to obtain dose vs. thickness  
curves for different types and amounts of shielding  
material.

(U)

AD- 609 501

UNCLASSIFIED

PAGE

189

AD- 603 013

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 603 013

GENERAL DYNAMICS CORP GROTON CONN ELECTRIC BOAT DIV

RESEARCH ON A WASTE SYSTEM FOR AEROSPACE  
STATIONS. (U)

DESCRIPTIVE NOTE: Rept. for Apr 63-Jan 64,  
MAY 64 BGP wallman, Harold ; Dodson, John  
;  
REPT. NO. U413 64 056  
CONTRACT: AF33 657 11489  
PROJ: 6373  
TASK: 637305  
MONITOR: AMRL TDR64 33

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:  
DESCRIPTORS: (\*WASTES (SANITARY ENGINEERING), AEROSPACE  
CRAFT), (\*SPACE STATIONS, WASTES (SANITARY ENGINEERING),  
(\*CLOSED-CYCLE ECOLOGICAL SYSTEMS, SPACE STATIONS),  
URINE, INCINERATORS, DISPOSAL, COLLECTING METHODS,  
STORAGE, CONTAINERS), DISTILLING PLANTS, VACUUM  
APPARATUS, PYROLYSIS, FREEZE DRYING, METABOLISM, SPACE  
BIOLOGY (U)  
IDENTIFIERS: FECES (U)

An engineering evaluation was conducted to select  
an optimum waste management system for collection,  
storage, and/or disposal of feces and urine in a  
space station under weightless conditions. Based  
on this study, a detailed design of an optimum waste  
management system was prepared for a 7-man, 15-day  
mission. Tests performed on a breadboard model of  
the feces collector demonstrated the feasibility of  
the selected approach. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 603 012

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

COSMIC RESEARCH, 1964, VOL. 2, NO. 3. (U)

JUL 64 253P

REPT. NO. FTD-TT-64-770

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Unedited rough draft trans. of Kosmicheskie Issledovaniya (USSR) 1964, v. 2, no. 3, p. 355-504.

DESCRIPTORS: (\*SPACE FLIGHT, SCIENTIFIC RESEARCH), (\*ASTROPHYSICS, SCIENTIFIC RESEARCH), SATELLITES (ARTIFICIAL), AEROSPACE MEDICINE, SPACE PROPULSION, SPACE STATIONS, SPACECRAFT, NUMERICAL INTEGRATION, DIFFERENTIAL EQUATIONS, MATHEMATICAL ANALYSIS, OPTICAL PROPERTIES, CLOUDS, METEOROLOGICAL SATELLITES, PERTURBATION THEORY, MAGNETIC FIELDS, INTERPLANETARY TRAJECTORIES, ORBITS, RADIOACTIVITY, HYPERSONIC FLOW, PRESSURE SUITS, USSR (U)

Contents: Interplanetary flights with constant output engines, the acceleration of a spacecraft within the range of planetary influence, on space-flight trajectories with a constant reaction acceleration vector, optimum trajectories and optimum parameters for space vehicles, method of quickest descent as applied to computation of interorbital trajectories with engines of limited power, radiative heating in hypersonic flow, optical properties of clouds, equation for relevance of information from weather satellites and formulation of inverse problems, analytical representation of the earth's magnetic field in the orbital coordinate system, geographical distribution of radiation intensity in the region of the Brazilian magnetic anomaly at an altitude of about 300 km, investigation of terrestrial radiation belts in the vicinity of the Brazilian magnetic anomaly at altitudes of 235-345 km, the possibilities of replacing the nitrogen in the air with helium in spacevehicle cabins and the effectiveness of using a helium-oxygen mixture for ventilation of a space-pressure suit. (U)

AD- 603 012

UNCLASSIFIED

PAGE

190

AD- 602 486

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 602 486

GIANNINI CONTROLS CORP MALVERN PA

THE EFFECT OF ELASTICITY ON THE STABILITY OF MANNED ROTATING SPACE STATIONS. (U)

MAY 64 28P Frueh, Frank J. ;Miller,

Jacob M. ;

REPT. NO. TR02 004

CONTRACT: AF49 638 1015

MONITOR: AFOSR , 64 0991

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:  
DESCRIPTORS: (\*SPACE STATIONS, STABILITY), (STRUCTURES, AEROLASTICITY), ROTATION, AERODYNAMIC CONFIGURATIONS, DAMPING, JETS, OSCILLATION, AIRSPEED, FLIGHT PATHS, TORQUE, COUPLINGS, FORCE (MECHANICS), DESIGN, EQUATIONS, MATHEMATICAL ANALYSIS, PERFORMANCE (ENGINEERING), MANNED (U)

A basic investigation of the effects of structural flexibility of the rotating space station concept in terms of system stability is presented. The results of the analyses were formed into general stability criteria using the fundamental characteristics of the space station system. The criteria show the relationship between applied forces, configuration flexibility and configuration damping and are presented in a manner suitable for preliminary analysis of future design concepts. For design values of current space station concepts using spin-up jets and wobble rate damper systems and for the assumptions used in the analyses, the stability criteria indicate that no instability of the flexible modes should be encountered. (U)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZON07

AD- 601 899

RAND CORP SANTA MONICA CALIF

ADVANCED SYSTEMS TESTING ON A MANNED ORBITAL SPACE STATION. (U)

JUN 64 18P Trapp.O. L. :

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:  
DESCRIPTORS: (\*MANNED SPACECRAFT, FLIGHT TESTING),  
(\*ELECTRIC PROPULSION, FLIGHT TESTING), (\*SPACE FLIGHT,  
COSTS), SPACE STATIONS, SATELLITES (ARTIFICIAL), MANNED,  
TESTS, FAILURE, LOGISTICS, TEST EQUIPMENT (U)

Consideration is given to the cost of space-station testing and procedures for estimating these costs with direct reference to testing an electrical propulsion system. The advantages of manned-space-station tests, as compared with conventional flight tests, are pointed out. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZON07

AD- 601 509

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

NEW DATA ON MARS-1. (U)

MAY 64 9P  
REPT. NO. FTC-TT-64-237

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited trans. of Stiinta si Tehnica (Rumania) 1963 v. 15 no. 2, p. 40-41.  
DESCRIPTORS: (\*SPACE STATIONS, MARS PROBES), (\*MARS PROBES, SPACE STATIONS), SATELLITES (ARTIFICIAL), INTERPLANETARY TRAJECTORIES, CELESTIAL MECHANICS, INSTRUMENTATION, TELEMETERING DATA, SPACE ENVIRONMENTS, SPACECRAFT, SPACE PROBES, USSR (U)

Mars-1 (Interplanetary station): General description of the interplanetary trajectory, instrumentation and telemetering data concerning space environmental conditions. (U)

AD- 601 899

UNCLASSIFIED

PAGE 191

AD- 601 509

UNCLASSIFIED

ZON07

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 472 550

DOUGLAS AIRCRAFT CO INC SANTA MONICA CALIF MISSILE AND  
SPACE SYSTEMS DIV

BIOMEDICAL POTENTIAL OF A CENTRIFUGE IN AN ORBITING (U)  
LABORATORY.

DESCRIPTIVE NOTE: Final rept. Sep 64-Feb 65,  
JUL 65 122P White W. J. ;Nyberg, J. W.  
;White, P. D. ;Gimes, R. H. ;Finney, L. M. ;

REPT. NO. SM-48502  
CONTRACT: AF04 695 679  
MONITOR: SSD TDR-64-209-Suppl.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Supplement to Rept. no. TDR-64-  
209.

DESCRIPTORS: (=CENTRIFUGES, \*AEROSPACE MEDICINE), SPACE  
STATIONS, ACCELERATION, STRESS(PHYSIOLOGY), SPACE  
WEIGHTLESSNESS, WEIGHT, HUMANS, GRAVITY,  
EXERCISE(PHYSIOLOGY), CARDIOVASCULAR SYSTEM, SPACE  
ENVIRONMENTS, SIMULATION, SPACE, MAINTENANCE PERSONNEL,  
MANNED SPACECRAFT, ACCELERATION TOLERANCE (U)

Five studies concerning the potential of a  
centrifuge in an orbital laboratory were conducted.  
The first three studies include consequences of  
heart-to-foot gradients on tolerance to positive  
acceleration, a parametric study of the power  
requirements of a short radius centrifuge, and a  
technique utilizing the centrifuge for determining  
body mass in a null gravity state. The salient  
generalization from studies in which bed rest was  
used as the analog of null gravity were presented.  
The fourth study was conducted to study the  
influence of periodic centrifugation as a method of  
alleviating physiological disturbances, with emphasis  
on the cardiovascular system, brought about by 20  
days of bed rest. It was shown that motion  
sickness in the subjects was not a problem when  
exposed to high angular rates of rotation.  
Deterioration produced by recumbency was alleviated  
by periodic centrifugation, and subjects exposed to  
+4GZ four times daily showed less lability of  
blood pressure than did those receiving less  
acceleration.

(U)

AD- 472 550

UNCLASSIFIED

PAGE

192

AD- 459 966

UNCLASSIFIED

ZOM07

## UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07  
AD- 459 966

LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY  
DIV

DATA ON THE ELEKTRON SPACE SYSTEM, KOSMOS-26 THROUGH  
29, THE ZOND-1, AND THE POLET-2. (U)

DESCRIPTIVE NOTE: Comprehensive report on Surveys of  
Soviet-Bloc Scientific and Technical Literature.

MAY 64 24P  
REPT. NO. AIC-U-64-55

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*ASTRONAUTICS, REVIEWS), USSR, SPACE  
ENVIRONMENTS, SPACE FLIGHT, INSTRUMENTATION, SPACE  
PROBES, LAUNCHING, LIFE SUPPORT, MANEUVERING SATELLITES,  
SCIENTIFIC SATELLITES, SPACE STATIONS, SPACECRAFT  
DOCKING, PUBLIC OPINION (U)  
IDENTIFIERS: ELEKTRON, KOSMOS, ZOND (U)

Data on the Elektron space system Kosmos-26 through  
29, the Zond-1, and the Polet-2.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 438 517

LOCKHEED AIRCRAFT CORP BURBANK CALIF

A STUDY OF AN ORBITAL MAINTENANCE AND MATERIAL  
TRANSFER SHUTTLE. (U)

DESCRIPTIVE NOTE: Final technical rept., Feb-Oct 63.

MAR 64 373P Goodall, Ray ;

REPT. NO. LR17031

CONTRACT: AF33 657 10290

PROJ: 8170

TASK: 817010

MONITOR: RTD TOR63 4057

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Report on Design Study for an  
Orbital Maintenance and Material Transfer Shuttle.

DESCRIPTORS: (\*RENDEZVOUS SPACECRAFT, FEASIBILITY  
STUDIES); (\*MANNED SPACECRAFT, AIR TRANSPORTATION),  
SPACE MAINTENANCE, SPACE CAPSULES, MAINTENANCE  
PERSONNEL, LOGISTICS, WEIGHT, TRAINING DEVICES, LAUNCH  
VEHICLES (AEROSPACE), TRANSFER TRAJECTORIES, ROCKET  
MOTORS (LIQUID PROPELLANT), PERFORMANCE (ENGINEERING),  
THRUST, HAZARDS, AVIATION SAFETY, MAINTENANCE, VELOCITY,  
SPACE ENVIRONMENTS, HUMAN FACTORS ENGINEERING, COSTS,  
SPACE TO SPACE, ADHESIVE TAPES, DESIGN, FLIGHT CONTROL  
SYSTEMS, FUEL CONSUMPTION, SATELLITES (ARTIFICIAL),  
MANEUVERABILITY, RENDEZVOUS, ACCELERATION, TARGET  
DISCRIMINATION, ILLUMINATION, GUIDANCE, SPACE STATIONS,  
CONTROL SYSTEMS (U)

A conceptual study of an orbital maintenance and  
material transfer shuttle is presented. The  
shuttle is a one-man vehicle used for transporting  
personnel and materials between other orbiting  
vehicles and for performing maintenance and repair on  
space stations or unmanned satellites. The  
application of the shuttle to existing and proposed  
space systems is examined and found to be feasible  
and economically advantageous. The trade-offs  
between range, duration, propulsion and on-board  
power systems are presented and design values  
selected. A simple guidance technique using a  
short-range radar is formulated. Results of  
simulated maintenance experiments conducted with a  
worker in a pressure suit are reported and integrated  
into the shuttle design. (Author) (U)

AD- 438 517

UNCLASSIFIED

PAGE

193

AD- 430 239

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 430 239

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

ON THE WAY TO THE COSMOS, (U)

JAN 64 11P Dobronnavov, V. ;

MONITOR: FTD TT63 975

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Trans. from Krylya Rodiny, No.  
6, pp. 20-22, 1957.

DESCRIPTORS: (\*SPACE STATIONS, MANNED SPACECRAFT),  
WEIGHTLESSNESS, SPACE ENVIRONMENTS, LABORATORY ANIMALS, (U)  
ROCKETS, SPACE, RENDEZVOUS SPACECRAFT, THEORY (U)  
IDENTIFIERS: RESEARCH ROCKETS (U)

An article from the Russian periodical, Krylya  
Rodiny.

## UNCLASSIFIED

## TITLE INDEX

Abort Separation, Longitudinal Force, and Moment Characteristics of McDonnell Douglas Booster and Orbiter Space Shuttle Vehicles at Mach Numbers 2.0 to 6.0.  
AD- 738 645

Abort Separation Pressure Distributions on McDonnell-Douglas Space Shuttle Configurations at Mach Numbers 2, 3, and 5.  
AD- 742 995

ADVANCED SYSTEMS TESTING ON A MANNED ORBITAL SPACE STATION.  
AD- 601 899

Aerodynamic Characteristics of Two-Dimensional Waverider Configurations.  
AD- 765 285

Aerodynamic Stability and Control, Data, Model 844-2035.  
AD- 756 854

Aeroelastic Stability of Thin Shell Structures at Subsonic Mach Numbers and the Active Suppression of Flutter Phenomena.  
AD- 741 899

Aerothermal Evaluation of the Space Shuttle Solid Rocket Booster and Solid Rocket Motor Thermal Protection System.  
AD-A070 444

Aerothermal Tests of the Space Shuttle External Tank Insulating Material.  
AD-A017 497

AGARD Highlights.  
AD-A050 761

Age CEI Design/Performance Verification Test Plan for CEI No. MOL 104A. Transporter - Mission Module for the Manned Orbiting Laboratory (MOL) System. CDRL Item

No. 7014/UT-454.  
AD- 857 026

Air Force Reusable Rocket Engine Program XLR129-P-1. Volume I.  
AD- 881 744

Analysis of Crew Escape Initiation Response Characteristics Form Titan IIIM/Gemini B State 'Q' Abort Simulation.  
AD- 856 902

Annual Report of the Lawrence Livermore Laboratory to the FAA on the High Altitude Pollution Program-1978.  
AD-A069 127

Applications Study of Expandable Space Structures.  
AD- 879 707

Artificial Heavenly Palaces.  
AD-A075 198

ASSEMBLY AND MAINTENANCE OF LIGHTWEIGHT METALLIC STRUCTURES IN SPACE.  
AD- 688 266

AN ASSESSMENT OF THE PRACTICALITY OF ORBITAL MAINTENANCE.  
AD- 658 454

Astronaut Manual EVA Guidance: An Operational Procedure.  
AD-A026 267

BIOMEDICAL POTENTIAL OF A CENTRIFUGE IN AN ORBITING LABORATORY.  
AD- 472 550

Buckling Analysis of Shuttle Disposable Liquid Hydrogen Tank with Floating Rings.  
AD- 743 508

Category I Test Plan Gemini B Procedures Simulator.

CDRL Acceptance Test Plan for Environmental Control Unit. Sequence Number T055. Data Item Number UT-455.  
AD- 857 013

CDRL Acceptance Test Plan for Environmental Monitor Unit. Sequence Number T056. Data Item Number UT455.  
AD- 857 014

CDRL Validation Test Plan for Environmental Monitor Unit. Sequence Number T016. Data Item Number UT454.  
AD- 857 012

Centaur Interim Upper Stage (IUS) System Study. Volume I. Executive Summary.  
AD-A021 401

Centaur Interim Upper Stage (IUS) System Study. Volume II. Technical.  
AD-A021 415

Checkout System Requirements CITE 400 A.  
AD- 859 096

Chemical Orbit-to-Orbit Shuttle Task Summary.  
AD- 742 984

CITE Interfaces.  
AD- 859 093

CLINICAL ASPECTS OF AEROSPACE NURSING.  
AD- 623 967

COLONIZING OUTER SPACE.  
AD- 615 230

Comparison of Chemical and Nuclear Propulsion for Lunar and Cislunar Transportation Systems.

TITLE INDEX-1  
UNCLASSIFIED ZOM07



# UNCLASSIFIED

AD- 731 963

Computer Program Category I Test Plan for CEI MOL909A. CDRL Item T108. Data Item No. UT-467. AD- 857 019

Condensate Wetting of Suit Heat Exchanger Water Separator Plates. AD- 856 891

Contract End Item Design Performance/Verification. Test Procedures for MOL Computer Integrated Test Equipment for Mission Payload System Segment (MOL-CITE-MPSS) CDRL Item No. T-050 Data Item No. UT-451. AD- 859 092

Coolant Pump Assembly, Low Temperature Start Test. AD- 856 670

Coolant Pump Power Inverter - Breadboard Evaluation Testing. AD- 856 665

Coolant Pump Power Inverter - Motor Running Characteristics. AD- 856 878

COSMIC RESEARCH, 1964, VOL. 2, NO. 3. AD- 603 012

Critical Design Review Package for Environmental Control Unit CEI No. MOL-109A. AD- 856 831

Current and Projected Government and Commercial Space Activities. AD-8004 682

Current Rating of 24 Gauge High Strength Alloy Wire. AD- 856 533

DATA ON THE ELEKTRON SPACE SYSTEM, KOSMOS-26 THROUGH 29, THE ZOND-1,

AND THE POLET-2.

AD- 459 966

Data Verification Tests of a 0.02-Scale NASA Space Shuttle Launch Vehicle at Mach Numbers from 0.60 to 1.55. AD-A069 194

Data Verification Tests of a 0.03-Scale NASA Space Shuttle Launch Vehicle at Mach Numbers from 0.60 to 1.55. AD-A070 442

Delta Interim Upper Stage System Study. Volume I. Executive Summary. AD-A021 416

Delta Interim Upper Stage System Study. Volume II. Technical Report. AD-A021 417

Department of Defense Space Shuttle on-Board Software Requirements. AD- 785 123

Department of Defense Space Transportation System (DOD/STS) Mission Operations Systems Definition Mission Assessment Report: Operations Design Mission A. AD-A045 100

Department of Defense Space Transportation System Mission Operations System Definition - Computational Function Allocation. AD-A022 864

Department of Defense Space Transportation System Mission Operations Systems Definition Mission Assessment Report: Operations Design Mission A. AD-A018 215

Department of Defense Space

Transportation System Orbiter Avionics Software Integration Study. Analysis of Orbiter Systems to Meet MASE Requirements. AD-A070 634

Description of Retrograde Time Predict and Orbit Navigation Simulation Program (KAK2) Gemini B. AD- 857 031

Development of a Zero-G Gauging System. Volume I. AD- 779 915

Development of Beta-Spodumene Closed Pore Insulation (CPI). AD- 729 882

Development Test of Z100 FLSC Cutter Assembly with Dual Titanium Straps. AD- 856 553

Dissection of Hatch Actuator Breech Cartridge, P/N 4218-10 (15-1006). AD- 856 651

DISSOLVED NITROGEN AND BENDS IN OXYGEN/NITROGEN MIXTURES DURING EXERCISE AT DECREASED PRESSURES. AD- 620 625

DDD Participation in the Shuttle Program a Management Analysis. AD-A027 552

DOD/STS Mission Operations Systems Definition Mission Assessment Report: Operations Design Mission B. AD-A019 274

Dynamic Stability Testing of Aircraft - Needs Versus Capabilities. AD- 773 160

Dynamic Stability Testing of Space Shuttle Configurations during Abort Separation at Mach Numbers 1.76 and

TITLE INDEX-2  
UNCLASSIFIED ZOM07

COM-DYN

# UNCLASSIFIED

2.  
AD- 731 771

THE EFFECT OF ELASTICITY ON THE STABILITY OF MANNED ROTATING SPACE STATIONS.  
AD- 602 486

Effects and Control of Contamination from a Scaled MOL attitude Control Thruster in a Tangential Orientation.  
AD- 860 371

Effects and Control of Contamination From a Scaled MOL trans-ational Thruster in a Longitudinal Orientation.  
AD- 861 021

Effects of Vertical Tail Flexibility on the Aerodynamic Characteristics of a 0.03-Scale NASA Space Shuttle Orbiter at Mach Numbers from 0.90 to 1.55.  
AD-A062 377

ELECTRICAL POWER SYSTEMS FOR THE MANNED ORBITING LABORATORY.  
AD- 624 688

Electromagnetic Compatibility Requirements MOL Systems Orbiting Vehicle.  
AD- 856 516

EMI Test of Gemini B Limit Switches.  
AD- 856 569

Environmental and Test Requirements Gemini B Spacecraft.  
AD- 856 512

Environmental Impact Analysis Process. Environmental Impact Statement Space Shuttle Program Vandenberg AFB, California.  
AD-A060 462

Environmental Testing of Closed

Pore Insulation (CPI) I - ARC Jet Testing.  
AD- 756 204

Environmental Testing of Closed Pore Insulation (CPI). II. Salt Spray Testing.  
AD- 757 424

Environmental Testing of Closed Pore Insulation (CPI), III - Rain Erosion Testing.  
AD- 765 392

Evaluation of Wire Characteristics for use on Gemini B.  
AD- 856 877

Example of Dynamic Interference Effects between Two Oscillating Vehicles.  
AD- 772 888

EXPERIMENTAL INVESTIGATION OF THE EFFECTS OF ELASTICITY ON THE STABILITY OF MANNED ROTATING SPACE STATIONS.  
AD- 620 866

EXPERIMENTAL INVESTIGATION OF THE EFFECTS OF ELASTICITY ON THE STABILITY OF MANNED ROTATING SPACE STATIONS.  
AD- 638 705

Experimental Investigation of Venting Water into a Vacuum.  
AD- 893 928

Extravehicular Activities System Effectiveness. Volume I Phase II Summary Report.  
AD- 847 481

Extravehicular Activities System Effectiveness. Volume III Phase II Effectiveness Computer Model.  
AD- 847 482

Extravehicular Crew Transfer Test Report.

Pore Insulation (CPI) I - ARC Jet Testing.  
AD- 756 204

Extravehicular Crew Transfer Test Report July 1968.  
AD- 856 875

Finite Element Modeling and Optimization of Aerospace Structures.  
AD- 754 915

Five Year Plan for Space Test Program.  
AD-A065 866

THE FLIGHT OF AUTOMATIC INTERPLANETARY STATIONS 'VENUS-2' AND 'VENUS-3'.  
AD- 634 931

Flow-Field Measurements in the Windward Surface Shock Layer of Space Shuttle Orbiter Configurations at Mach Number 8.  
AD-A012 875

FLSC Cutter Assembly/Dual Titanium Straps Gap Test.  
AD- 856 883

Flutter Test of a 0.50-Scale MOL meteoroid Shield Panel at Mach Numbers from 1.2 to 2.5.  
AD- 848 174

Forecast of Human Factors Technology Issues and Requirements for Advanced Aero-Hydro-Space Systems.  
AD- 721 713

FOREIGN SCIENCE BULLETIN, VOLUME 5, NUMBER 4, APRIL 1969.  
AD- 687 326

Functional Tests on Two Coolant Pump Assemblies.  
AD- 856 879

Functional Tests on Two Gemini B Coolant Pump Assemblies.

TITLE INDEX-3  
UNCLASSIFIED ZOM07

THE-FUN

UNCLASSIFIED

AD- 856 574	Gemini B Flight Effectiveness Model Report, AD- 856 817	Volume V. Cabin Egress. AD- 856 814
G. B. Q. Antenna Tests. AD- 856 541	Gemini B Interface Heat Exchanger Flow Distribution Test. AD- 856 890	Gemini B Oxygen Safety Study. Volume VI. Procedures - Ground Testing and Flight. AD- 856 662
G.B.Q. Antenna Tests. AD- 856 876	Gemini B Large Pressure Bulkhead Hatch Element Strength Verification Test. AD- 856 538	Gemini B Oxygen Safety Study. Volume VII. Simplified Two Gas System. AD- 856 663
G Protective Tilting Aircraft Seats. AD- 741 202	Gemini B Limit Switches. Spacecraft Pressure Effects. AD- 856 657	Gemini B Oxygen Safety Study. Volume VIII. Inflight Emergency Operations and Procedures. AD- 856 664
GE-AVE Maintainability Program Plan. CDRL Item No. R014. Data Item No. UR-417. AD- 857 017	Gemini B Mass Properties Report 3.3 Operational Support Plan for Remote Site Phase. AD- 856 816	GEMINI-B Pre-Ignition Effectiveness Model Report, AD- 856 740
Gemini B Aerodynamic Data Book. Volume I. Aerodynamic Coefficients. AD- 859 551	Gemini B Orbital Storage Test of Reentry Control System Engine Propellant Valves. AD- 856 882	Gemini B Procedures Simulator Initial Version Precision Qualification Test Procedure CEI 58Y010A GBPS Computer Program, AD- 856 847
Gemini B Aerodynamic Data Book. Volume II. Static and Oscillatory Aerodynamic Pressures and Airload Distributions. AD- 856 733	Gemini B Orbiting Vehicle Effectiveness Assessment Plan Report. AD- 856 815	Gemini B Procedures Simulator. Performance/Design Requirements. AD- 856 820
Gemini B Antenna System Testing. AD- 856 849	Gemini B Oxygen Safety Study. Volume I. Summary and Recommendations. AD- 856 739	Gemini B Re-Entry Module/Adapter Attachment Fairing Aerodynamic Heating and Pressure Tests in the McDonnell Hypervelocity Impulse Tunnel - Series I. AD- 856 900
Gemini B Blast Shield: Mechanical Properties of Aluminum Flexcore. AD- 856 573	Gemini B Oxygen Safety Study. Volume II. NASA Gemini Environmental Control System Data. AD- 856 811	Gemini B Re-Entry Module/Adapter Attachment Fairing Aerodynamic Heating and Pressure Tests in the McDonnell Hypervelocity Impulse Tunnel - Series I. AD- 856 901
Gemini B Effectiveness Assessment Plan. AD- 856 753	Gemini B Oxygen Safety Study. Volume III. Materials Summary. AD- 856 812	Gemini B Safety Program Status Report. AD- 856 819
Gemini B Ejection Seat Functional Test Air Drop Test Plan, AD- 856 746	Gemini B Oxygen Safety Study. Volume IV. Equipment Review. AD- 856 813	Gemini B Spacecraft Systems Test
Gemini B - Ejection Seat System Test - Dual Ejection Test Plan. AD- 856 755	Gemini B Oxygen Safety Study.	
Gemini B Electronic Systems Test Unit (ESTU) Test Plan. AD- 856 752		

TITLE INDEX-4  
UNCLASSIFIED ZOM07

G. -GEM

# UNCLASSIFIED

Plan. AD- 856 897	in AEDC/VKF Tunnel B. AD-A059 497	the Space Shuttle Orbiter. AD-A059 796
Gemini B Structural Qualification Test Plan, AD- 856 750	Heat-Transfer Tests of a 0.0175-Scale Model of the Space Shuttle at Mach Numbers 2.5, 3.5, 4.5, and 5.5. AD-A025 080	INSTABILITY OF SPINNING SPACE STATIONS DUE TO CREW MOTION. AD- 621 861
Guidance and Control Mechanics Test - Attitude Control System Analytical Performance Verification. AD- 856 672	Heat-Transfer Tests of Two Space Shuttle Orbiter Configurations at Mach Number 8. AD- 772 687	Integrated Data Bus Study. AD- 875 858
Hatch Actuator Breech Combustible Material Evaluation. AD- 856 884	Heat-Transfer Tests on the Nose of the Shuttle Orbiter External Tank (FH-15). AD-A058 693	Interface Heat Exchanger Heat Transfer Element Test. AD- 856 892
Heat Shield Hatch Acceptance Test for Functional Fit at Temperature. AD- 856 656	Heat-Transfer Tests on the Rockwell International Space Shuttle Orbiter with and without Simulated Protuberances. AD-A012 876	Interface Heat Exchanger Element Test. AD- 856 667
Heat Shield Hatch Acceptance Test for Functional Fit at Temperature. AD- 856 886	Heat-Transfer Tests on the Rockwell International Space Shuttle Orbiter with Boundary-Layer Trips (OH-54). AD-A024 553	Interface Heat Exchanger System Test. AD- 856 674
Heat Shield Hatch Mechanism - Simulated Altitude and Temperature Functional Test. AD- 856 885	The Hypersonic Aerodynamic Characteristics of the Gemini Re-Entry Module Based on a Statistical Analysis of Wind Tunnel Test Data. AD- 856 691	Interruption of Denitrogenation by Air-Breathing. AD-A020 049
Heat-Transfer and Flow-Field Tests of the McDonnell Douglas-Martin Marietta Space Shuttle Configurations. AD- 759 176	Immersion Testing of Teflon Bundles. AD- 856 545	Ionspheric Aerodynamics Related to Space Vehicles, Space Shuttles and Satellites. AD- 737 406
Heat-Transfer and Flow-Field Tests of the North American Rockwell/General Dynamics Convair Space Shuttle Configurations. AD- 755 354	Impact of Space Shuttle Support Facilities Construction on Special Interest Plant Species (Vandenberg AFB, CA). AD-A049 177	Item Test Plan AGE Test Support Programs. CEI No. MDL805A. CDRL item TBD T086. Data Item No. UT-467. AD- 857 021
Heat-Transfer Investigation of Langley Research Center Delta Wing Configurations at Mach Numbers 8 and 10.5. AD- 755 355	Industrial Chemistry in Space. AD- 720 136	Item Test Plan (Computer Program) for CEI No. MDL301A. Cite Diagnostic and Operational Readiness Programs. CDRL Item No. B038. Data Item No. UT-413. AD- 857 020
Heat Transfer Test on the NASA/Rockwell International Space Shuttle Orbiter at Mach number 8.0	Infrared and Phase-Change Paint Measurements of Heat-Transfer on	Item Test Plan (Computer Program) Gemini B Procedures Simulator. Sequence Number 29T. Data Item U-T 216. AD- 856 898

TITLE INDEX-5  
UNCLASSIFIED ZOM07

GEM-ITE

# UNCLASSIFIED

Item Test Procedures for CEI No.  
 MOL805A. Age Test Support  
 Programs. CDRL Item T087. Data  
 Item No. UT-468.  
 AD- 857 015

A Kalman Filter Design for the  
 Space Shuttle Orbiter Inertial  
 Measuring Unit During  
 Deorbit/Reentry Using Global  
 Positioning System Satellite  
 Information.  
 AD-A055 465

Major Range Acquisitions for the  
 Space Shuttle/Satellite Control  
 Satellite Era.  
 AD-A038 670

Management of DOD Space Payload  
 Integration in the Space Shuttle  
 Era.  
 AD-A026 384

The Mark IV Supersonic-Hypersonic  
 Arbitrary-Body Program. Volume I.  
 User's Manual.  
 AD- 778 443

The Mark IV Supersonic-Hypersonic  
 Arbitrary-Body Program. Volume II.  
 Program Formulation.  
 AD- 778 444

The Mark IV Supersonic-Hypersonic  
 Arbitrary-Body Program. Volume III.  
 Program Listings.  
 AD- 778 445

Massive Overload of Kynar (5M974  
 and 5M975) Insulated Wire in Air.  
 AD- 856 655

Massive Overloads on Teflon,  
 Kapton, and Kynar Insulated Wire in  
 an Oxygen Atmosphere.  
 AD- 856 654

A Mathematical Model for the  
 Longitudinal Control System of the  
 Space Shuttle Orbiter.

AD-A041 158

A MATHEMATICAL MODEL OF SUPPLY  
 SUPPORT FOR SPACE OPERATIONS.  
 AD- 615 165

Maximum Payload, Four-Impulse, Non-  
 Coplanar, Orbital Transfers for an  
 Upper Stage Vehicle of the Space  
 Transportation System.  
 AD-A034 758

Maximum Payload Orbital Transfers  
 for a Space Shuttle Solid-Fuel  
 Upper Stage Vehicle.  
 AD-A034 947

MOL Baseline Requirements for  
 Central, Test, and Reentry Modules  
 of the Gemini B Computer Program.  
 Volume III. MOL Baseline Equations  
 Document. Part III. Data Item  
 Number UC-228: Reentry Module  
 Requirements.  
 AD- 856 741

MOL Baseline Requirements for  
 Central, Test, and Reentry Modules  
 of the Gemini B Computer Program.  
 Volume III. MOL Baseline Equations  
 Document. Part I. Data Item  
 Number UC-228: System  
 Requirements, Central Module  
 Requirements.  
 AD- 856 771

MOL Baseline Requirements for  
 Central, Test, and Reentry Modules  
 of the Gemini B Computer Program.  
 Volume III. MOL Baseline Equations  
 Document. Part II. Data Item  
 Number UC-228: Test Module  
 Requirements.  
 AD- 856 772

MOL-CITE Hardware/Software  
 Interface Definition Document.  
 Revision B.  
 AD- 859 095

MOL Effectiveness Program Status

Report. First Quarter 1969.  
 Sequence Number 6423. Data Item  
 No. UR-116.  
 AD- 857 162

MOL Effectiveness Program Status  
 Report. Fourth Quarter 1968.  
 Sequence Number 8428. Data Item  
 No. UR-116.  
 AD- 857 161

MOL Fire Safety Activities  
 (Briefing).  
 AD- 856 524

MOL Fluid Dynamics Preliminary Data  
 Report: Thruster Plume Tests.  
 Sequence Number 8319. Item Data  
 Number UT-132.  
 AD- 856 737

MOL Fluid Dynamics Test Pretest  
 Report. MOL Protuberance Heating  
 Wind Tunnel Model. Sequence Number  
 8334. Data Item Number UT-135.  
 AD- 856 515

MOL Fluid Dynamics Test Pretest  
 Report: Test Line Item 1A35. MOL  
 flutter Test. LM Meteoroid Shield  
 Half-Scale Model. Sequence Number  
 8332. Data Item Number UT-135.  
 AD- 856 548

MOL Ground Test Plan, Acceptance  
 Test Plan. Volume I. Ave  
 Components through Subsystems and  
 Age CEI's Sequence Number 8287.  
 Data Item Number UT-101.  
 AD- 856 841

MOL Ground Test Plan: Development  
 Test Plan. Sequence Number 8285.  
 MOL Data Item Number UT-101.  
 AD- 856 521

MOL Ground Test Plan:  
 effectiveness Test Plan. Sequence  
 Number 8288. Data Item Number UT-  
 004.  
 AD- 856 536

TITLE INDEX-6  
 UNCLASSIFIED ZOM07

ITE-MOL

# UNCLASSIFIED

MOL Ground Test Plan. Qualification Test Plan. Sequence Number 8286. AD- 859 311	MOL Safety Evaluation Based on Apollo 204 Review Board Findings and Recommendations, and Brooks Air Force Base Accident Investigation Board Conclusions. AD- 856 687	Subsonic and Transonic Turbulent Boundary Layer on an Infinite Yawed Airfoil. AD- 763 730
MOL Item Test Plan (Computer Programs). Computer Program, Compiler, Manned Orbiting Laboratory, Test Oriented Language. Sequence Number 8294. AD- 856 511	MOL Zero G Development Test Report. DAC Line Item 1AJ32. Sequence Number 8300. AD- 856 544	02/H2 Advanced Maneuvering Propulsion Technology Program Engine System Studies. Volume I. Aerospike Engine Configuration Design and Analysis. AD- 890 753
MOL Item Test Plan (Computer Programs). Computer Program, Operational, All Systems Test Equipment Group. Sequence Number 8295. Data Item Number UT-109. AD- 856 509	MOL Zero G Development Test Report. DD Form 1423 Data Item UT-(110). AD- 857 542	02/H2 Advanced Maneuvering Propulsion Technology Program Engine System Studies. Volume II. 25,000 Pound Thrust Bell Engine Configuration Design and Analysis. AD- 894 424
MOL Mass Properties Report 3-2: Verification Plan. Sequence Number 8296. Data Item Number S-66. AD- 856 523	NASA-Convaair ACS Space Shuttle Study at Mach Number 8.0. AD- 759 578	On Dynamic Stability Testing of Unconventional Configurations. AD- 721 971
MOL Preliminary Data Report of the MOL Probeance Heat Transfer Test (1AL1). Volume I. Data Item Number UT-132. AD- 857 160	NASA/RI OA 208 and 209 Verification Static-Stability and Control-Effectiveness Tests of the Space Shuttle Orbiter Vehicle at Mach Numbers from 2 to 8. AD-A057 080	On the Simulation of Plumes from High Pressure Hydrogen/Oxygen Rocket Engines. AD- 733 896
MOL Rigid Body Fluctuating Pressure Test (1AL2). Sequence Number 8333. Data Item UT-135. AD- 856 513	NATIONAL CONFERENCE ON SPACE MAINTENANCE AND EXTRAVEHICULAR ACTIVITIES (2ND). 6-8 AUGUST 1968, LAS VEGAS, NEVADA. AD- 688 246	ON THE WAY TO THE COSMOS. AD- 430 239
MOL Rigid Body Fluctuating Pressure Test (1AL2). Volume I. Sequence Number 8325. MOL Data Item UT-133. AD- 856 546	NEW DATA ON MARS-1. AD- 601 509	Operation and Service Manual for 6000 PSIG Oxygen Supply Cart 58E181231. AD- 856 776
MOL Rigid Body Fluctuating Pressure Test (1AL2). Volume I. Sequence Number 8329. MOL Data Item UT-134. AD- 856 743	New Shock Tube Laboratory at Aachen, Germany. AD- 741 191	Operation and Service Manual for Accelerometer Static Test Unit 52E440039. AD- 857 151
MOL Rigid Body Fluctuating Pressure Test (1AL2). Volume II. Sequence Number 8329. Data Item Number UT-134. AD- 856 554	Nonequilibrium Stagnation Region Aerodynamic Heating of Hypersonic Glide Vehicles, AD-A030 389	Operation and Service Manual for ACPU EFC Charger/Tester 52E270071. AD- 857 173
	NOTE ON DETERMINING THE OVERALL DISTANCE SCALE OF THE EARTH USING HIGH ALTITUDE SATELLITES. AD- 622 479	Operation and Service Manual for ACPU System Tester 52E270086. AD- 857 157
	Numerical Calculation of the TITLE INDEX-7 ZOM07	Operation and Service Manual for Air Data System Tester 52E360013.

MOL-OPE

UNCLASSIFIED

UNCLASSIFIED

AD- 856 796	Operation and Service Manual for Attitude Control System Electronics EFC Console 52E270002.	AD- 857 138	Operation and Service Manual for ECS Primary O2 System High Pressure Leak Rate Tester 52E180193.
AD- 856 790		AD- 857 137	
AD- 857 154	Operation and Service Manual for Attitude Indicator EFC Console 31E270035.	AD- 856 768	Operation and Service Manual for Ejection Seat Functional Test Fixture 52E040089.
AD- 857 154		AD- 856 786	
AD- 856 788	Operation and Service Manual for Blockhouse Power Backup Battery Rack 52E230049 and External Power Control and Monitor Backup Battery Rack 52E230058.	AD- 856 786	Operation and Service Manual for External Power System Control and Monitor 52E230005 Spacecraft and Module Test Power Supply 52E230038 Blockhouse DC Power Supply 52E230008.
AD- 856 801	Operation and Service Manual for C and S Beacon EFC Test Bench 52E190003.	AD- 857 155	Operation and Service Manual for First and Second Stage Facility N2 Regulators 52E420136, 52E420056.
AD- 856 785	Operation and Service Manual for C- Band Antenna Probe Assembly 52E190012.	AD- 857 158	Operation and Service Manual for Fuel and Oxidizer Flush and Purge Units 52E420008, 52E420024.
AD- 857 149	Operation and Service Manual for Computer Data Display System 58E270803.	AD- 856 773	Operation and Service Manual for Gemini B/Laboratory Electrical Interface Substitute 58E040503.
AD- 857 166	Operation and Service Manual for Computer EFC Test Console 52E270023, Volume II.	AD- 856 774	Operation and Service Manual for Gemini B/MOL/L/V Electrical Interface Substitute 58E040504.
AD- 856 793	Operation and Service Manual for Computer EFC Test Console 52E270023, Volume III, Part I.	AD- 856 780	Operation and Service Manual for GOX High Pressure Regulator Panel 52E180030.
AD- 856 794	Operation and Service Manual for Computer EFC Test Console 52E270023, Volume III, Part II, Section IV, List of Subassemblies and Diagrams.	AD- 857 153	Operation and Service Manual for Guidance and Control EFC Recorder 52E270059.
			Operation and Service Manual for
AD- 857 165	Operation and Service Manual for Computer System Test Console 52E270003, Volume 2.	AD- 857 175	Operation and Service Manual for Control Relay EFC Tester 52E230014.
AD- 856 791	Operation and Service Manual for Computer System Test Console 52E270003, Volume I.	AD- 856 770	Operation and Service Manual for Coolant Fluid Transfer Kit 52E180184.
AD- 856 784	Operation and Service Manual for Dual Gas Flow Control Panel 58E181228.	AD- 857 142	Operation and Service Manual for DC- DC Converter EFC Console 52E440008,
AD- 856 784		AD- 856 784	
AD- 856 782	Operation and Service Manual for ECS Coolant System Leak Rate Tester 52E180150.	AD- 857 143	Operation and Service Manual for ECS EFC Coolant Bench 52E180013.
AD- 857 139	Operation and Service Manual for ECS EFC High Pressure Bench 52E180011.	AD- 856 775	Operation and Service Manual for ECS EFC Low Pressure Bench 52E180010.
AD- 856 794	Operation and Service Manual for ECS Primary O2 and Water System Low Pressure Leak Rate Tester 52E180194.	AD- 856 794	

TITLE INDEX-8  
UNCLASSIFIED 20M07

OPE-OPE

UNCLASSIFIED

Guidance and Control Recorder Assembly 52E270062, AD- 857 156	LQX and LN2 Installation Kits 52E180178, AD- 856 779	Operation and Service Manual for Spacecraft Battery Balancing Unit 52E230131, AD- 857 146
Operation and Service Manual for Hand Controller Tester Kit 52E270049, AD- 856 795	Operation and Service Manual for Nitrogen and Helium Pressurization Units 52E420013, 52E420014, AD- 856 803	Operation and Service Manual for Spacecraft Battery Charger 52E230075, AD- 857 176
Operation and Service Manual for Hatch Actuator Test Fixture 52E040094, AD- 856 769	Operation and Service Manual for PCM Telemetry Ground Station 52E440011, AD- 857 171	Operation and Service Manual for Spacecraft Battery Load Bank 52E230073, AD- 856 789
Operation and Service Manual for Helium Leak Detector Cabinet 52E42-097, AD- 856 804	Operation and Service Manual for Portable Pyrotechnic Tester 52E400004, AD- 857 172	Operation and Service Manual for Spacecraft Command System Checkout and Monitor 58E190513, AD- 856 777
Operation and Service Manual for HF and Audio EFC Test Bench 52E19001, AD- 857 145	Operation and Service Manual for Propulsion Components EFC Console 52E420010, AD- 857 147	Operation and Service Manual for Spacecraft ECS Test Console 52E180076, AD- 856 781
Operation and Service Manual for High Pressure GN2/He Pressurization Panel 58E421218, AD- 856 805	Operation and Service Manual for Radiometer 52E440036, AD- 857 152	Operation and Service Manual for Spacecraft Ground Cooling Auxiliary Refrigeration Unit 52E180172, AD- 856 783
Operation and Service Manual for IMU Auxiliary Age Platform Alignment Mount Reference 52E270006, IMU Test Point Panel 52E270008, Three-Axis Platform Dolly 52E270036, IMU Test Cable Set 52E270053, AD- 857 174	Operation and Service Manual for Re-Entry Module Instrumentation Simulator 52E440041, AD- 856 807	Operation and Service Manual for Spacecraft Instrumentation System Test Set 52E440030, AD- 856 806
Operation and Service Manual for IMU EFC Test Console 52E270032, AD- 857 141	Operation and Service Manual for Rele, Panel EFC Console 52E230010, AD- 857 170	Operation and Service Manual for Spacecraft Leakage Tester 52E180027, AD- 856 778
Operation and Service Manual for IMU Pressurization Kit 52E270010, AD- 857 167	Operation and Service Manual for Rocket Pressure Test Kit 52E400002, AD- 856 797	Operation and Service Manual for Spacecraft Sequence Recorder 52E230003, AD- 856 802
Operation and Service Manual for Inertial Platform Test Console 52E270020, AD- 856 792	Operation and Service Manual for Console 52E230012 and Electronic Timer Control Panel 52E270048, AD- 856 787	Operation and Service Manual for Spacecraft Transportation Trailers 52E010016, AD- 856 767
Operation and Service Manual for	Operation and Service Manual for Sequential System Control and Monitor 52E230004, AD- 857 144	Operation and Service Manual for

TITLE INDEX-9  
UNCLASSIFIED ZOM07

OPE-OPE



# UNCLASSIFIED

Split Phase Converter 52E440049.  
AD- 856 809

Operation and Service Manual for  
Squib Simulator 52E400005.  
AD- 857 169

Operation and Service Manual for  
Standard Temperature Monitor System  
52E440044 and Harness Assembly  
52E440033.  
AD- 857 168

Operation and Service Manual for  
T/M Remote Displays Power Supply  
Assembly 52E440052.  
AD- 856 808

Operation and Service Manual for  
Telemetry Control and Checkout  
Console 52E440063.  
AD- 856 810

Operation and Service Manual for  
Thermocouple Checkout Box  
52E440047.  
AD- 857 164

Operation and Service Manual for  
Time Code Generator 52E440027 and  
Timing Distribution System  
52E440065.  
AD- 857 177

Operation and Service Manual for  
Time Reference System EFC Console  
52E270012,  
AD- 857 140

Operation and Service Manual for  
Umbilical Cable Tester 52E200004,  
AD- 857 159

Operations Management of DOD Space  
Missions in the Shuttle Era.  
AD-A038 673

Optimal Control of Libration Point  
Space Station.  
AD- 724 113

Optimal Three Burn Orbit Transfer.  
AD-A039 257

Optimal Trajectories for the  
Flyback Shuttle.  
AD- 746 656

OPTIMUM FEEDBACK CONTROL OF A  
SYNODIC SATELLITE.  
AD- 695 043

Orbit-to-Orbit Shuttle Engine  
Design Study. Book 1. Parametric  
Cycle Study.  
AD- 9C 190

Orbit-to-Orbit Shuttle Propellant  
Integration and Handling Study.  
AD- 735 290

ORBITAL BASING: KEY TO LOW COST  
SPACE OPERATIONS.  
AD- 655 342

Orbiting Vehicle Nonmetallic  
Materials Combustion and  
Atmospheric Contaminant Control  
Standard for the MOL Orbiting  
Laboratory Program.  
AD- 856 522

Orbiting Vehicle Nonmetallic  
Materials Combustion and  
Atmospheric Contaminant Control  
Standard for the MOL Orbiting  
Laboratory Program.  
AD- 856 742

Particle Induced Visual Phenomena  
in Space.  
AD-A053 213

PEOPLE AND SPACE.  
AD- 683 158

Performance Comparison of Gemini B  
Z191 MDF Explosive (DIPAM) to NASA  
Gemini Z191 MDF Explosive (ROX).  
AD- 856 540

Physical Properties of Vacuum De-

Oiled DC-325 Ablative Material.  
AD- 856 671

Pitch-, Yaw-, and Roll-Damping  
Characteristics of a Shuttle  
Orbiter at M = 8.  
AD-A011 648

PRE-PHASE I FOR DESIGN,  
FABRICATION, AND ORBITAL TESTING OF  
A SPACE STRUCTURE.  
AD- 815 716

Preliminary Gemini d Guidance  
Equations for the MOL Mission.  
AD- 856 690

Preliminary Handling Qualities  
Requirements for Lifting Re-Entry  
Vehicles during Terminal Flight.  
AD- 731 563

Pressure and Heat Transfer Tests on  
the NASA Space Shuttle External  
Tank at Mach Number 16.  
AD-A015 743

Procedural Support Data MOL Mission  
Module Transporter.  
AD- 859 125

Proceedings of the Biennial  
Guidance Test Symposium (9th) Held  
at Holloman Air Force Base, New  
Mexico on 10-12 October 1979.  
Volume I.  
AD-A076 567

Proceedings of the Multiplex Data  
Bus Conference Held at Baltimore  
Towers Hotel, Dayton, Ohio on 3-5  
November 1976.  
AD-A033 793

Program Description for Digital Six-  
Degree-of-Freedom Reentry  
Simulation. Gemini B.  
AD- 857 030

Program Titan IIIM Standard Space  
Launch Vehicle Component

TITLE INDEX-10  
UNCLASSIFIED ZOM07

OPE-9RD

# UNCLASSIFIED

Development Report for the Titan IIM Stage I Combustion Chamber, AD- 860 050	Program. AD-A063 077	on a Composite Expandable Structure for Spacecraft Airlock Application. AD- 850 512
Quality Assurance Plan for CRDL Item No. R015. Data Item No. UR- 418. AD- 859 098	RESEARCH ON A WASTE SYSTEM FOR AEROSPACE STATIONS. AD- 603 013	Simulated Thermal Protection Tile Roughness Effects on Windward Surface Heat Transfer on the Rockwell International Space Shuttle Orbiter. AD-A034 733
Quarterly Bulletin of the Division of Mechanical Engineering and the National Aeronautical Establishment. AD- 743 096	Results of the Polymeric Films Skylab DO24 Experiment. AD-A046 210	Skylab DO24 Thermal Control Coatings and Polymeric Films Experiment. AD-A046 208
RADIATION PROTECTION FOR MANNED ORBITING SPACE STATIONS, AD- 615 665	Reverse Pressure Effect on Suit Demand Regulator. AD- 856 673	Skylab Imagery: Application Reservoir Management in New England. AD-A030 329
Rain Erosion Characteristics of Thermal Protection System Materials at Subsonic Velocities. AD- 750 793	Role of Nuclear Stars in the Light Flashes Observed on Skylab 4, AD-A053 214	Small Gage W. v Overload Protection Evaluation. AD- 856 529
RCS Propellant Tank Thermostat Test. AD- 856 896	Roughness and Wall Temperature Effects on Boundary-Layer Transition on a 0.0175-Scale Space Shuttle Orbiter Model Tested at Mach Number 8. AD-A038 895	Solid Rocket Booster Dewatering System. AD-A028 742
Re-Entry Module/Adapter Interconnect Fairing Aerodynamic Heating Wind Tunnel Tests AEDC tunnel B. AD- 856 658	Salyut to be Supplied Automatically. AD-A018 540	SOVIET SPACE EXPLORATION AS VIEWED BY EAST GERMAN SPECIALISTS. AD- 624 575
Real Gas Scale Effects on Hypersonic Laminar Boundary-Layer Parameters Including Effects of Entropy-Layer Swallowing. AD-A018 755	SCIENTIFIC RESULTS FROM THE FLIGHT OF YANTAR AUTOMATIC IONOSPHERIC LABORATORIES. PART II. AD- 704 045	A Soviet Space Station Soon. AD- 860 583
Recent Advances in Aeronautical and Space Medicine. AD-A078 360	SELF-RIGIDIZING EXPANDABLE-SANDWICH AEROSPACE SHELTERS AND SOLAR COLLECTORS. AD- 656 747	SPACE OBSERVATIONS: SCIENCE PUSHES BACK ITS HORIZONS. AD- 702 322
Recent Notes and Data on Interference Heating. AD- 747 765	Separation Test of Simulated Gemini B Interface Heat Exchanger Coldplates. AD- 856 551	Space Shuttle. AD-A063 248
A Remote, Unmanned Dewatering System for Recovery of the Solid Rocket Booster of the Space Shuttle	Shuttle Impact on Communications Satellites as Seen from the User Viewpoint. AD-A061 036	Space Shuttle. AD-A066 278
	Simulated Meteoroid Impact Testing	Space Shuttle: A Case Study in Economic Analysis. AD-A033 871
		The Space Shuttle as an Element in

TITLE INDEX-11  
UNCLASSIFIED ZOMQ7

QUA-THE

UNCLASSIFIED

the National Space Program.  
AD- 729 770

Space Shuttle Digital Computer Simulation Benchmark.  
AD-A065 480

Space Shuttle External Tank Instrumentation Evaluation.  
AD-A070 443

Space Shuttle Response to Acoustic Combustion Instability in the solid Rocket Boosters.  
AD-A037 157

Space Shuttle Windward Streamline Laminar Viscous Shock-Layer Flows at Angle of Attack--Comparison of Theory and Experiment.  
AD-A042 843

Space Test Program Standard Satellite Launch Optimization Study.  
AD-A018 177

Space Transportation System Western Launch Site Construction Management Information System - A Case Study.  
AD-A077 675

SPACECRAFT UTILIZING THE LIFTING AND BALLISTIC REENTRY TECHNIQUES. PART I. SPACECRAFT MANEUVERING- AND DESCENT-SYSTEM HARDWARE: COMPILATION AND ANALYSIS OF EXTRACTS AND REVIEWS.  
AD- 647 648

Standard Test Rack Concept Definition Study, Manned Interface Definition.  
AD-A065 097

Standard Test Rack. Concept Definition Study. Structural Analysis Report.  
AD-A066 247

Standard Test Rack Exploitation

Study.  
AD-A064 773

Static Test of Recovery Parachute Aft Bridle Fitting and Support Structure.  
AD- 856 888

Static Test of the Gemini B Adapter for the Critical Combination of Ascent Phase Loads and Elevated Temperature.  
AD- 856 653

Static Test of the Hoist Loop Support Fitting.  
AD- 856 887

Station Keeping of the Space Shuttle in the Vicinity of a Deployed Payload.  
AD-A056 109

STATION OUTSIDE THE EARTH.  
AD- 631 585

Structural and Functional Test of the Gemini B Adapter Ground Coolant Supply Umbilical Disconnect.  
AD- 856 570

Structural Specification Gemini B Spacecraft.  
AD- 856 517

STS Utilization Study.  
AD-A064 681

STS Utilization Study Experiment Assessments.  
AD-A064 766

Studies of the Exhaust Products from Solid Propellant Rocket Motors.  
AD-A029 569

A STUDY OF AN ORBITAL MAINTENANCE AND MATERIAL TRANSFER SHUTTLE.  
AD- 438 517

Subscale Rocket Impingement - Blast Shield and Laboratory Tunnel Specimen.  
AD- 856 881

Supersonic Dynamic Stability Experiments on the Space Shuttle.  
AD- 748 562

THE SYNTHESIS OF A SYSTEM FOR OPTIMAL STABILIZATION OF A SPACE STATION.  
AD- 679 660

Tension and Shear Strength of Inserts in the Gemini B Blast Shield.  
AD- 856 669

Test Plan for Aerodynamic Heating and Pressure Tests of a 9-Percent Gemini B Re-Entry Configuration Model in the McDonnell Hypervelocity Impulse Tunnel.  
AD- 856 749

Test Plan Gemini B Adapter Separation Test - Abort Mode.  
AD- 856 756

Test Results from the NASA/Pockwell International Space Shuttle Integrated Vehicle Test (IH 85) Conducted in the AEDC-VKF Tunnel A.  
AD-A058 141

A THEORETICAL METHOD FOR PRECISION RENDEZVOUS STATION-KEEPING.  
AD- 612 048

Time-Optimal Rendezvous for an Upper Stage Vehicle of the Space Transportation System.  
AD-A019 328

Torque Versus Preload. Gemini B RV/Adapter Tie Strap.  
AD- 856 668

Torque vs Motor Input Current for Coolant Pump Motor, P/N 52-83700-

TITLE INDEX-12  
UNCLASSIFIED ZOM07

SPA-TOR

UNCLASSIFIED

403, S/N 123-111.

AD- 856 652

TRANSIENT DYNAMIC RESPONSE OF  
ORBITING SPACE STATIONS.

AD- 613 081

Ultimate Internal and External

Pressure Tests of the Reentry  
Module Structure (Pressure Test of  
Static Reentry Module I). Volume  
I.

AD- 856 889

The Value of an Orbital Minute.

AD-A018 534

Verification Test Plan for  
Environmental Control Unit CEI  
109A. Data Item No. UT-454.

AD- 859 127

Vibration Qualification Test of

Shock Mounted 52-88722-5 Low Range  
Pressure Transducer Gemini B-G8Q.

AD- 856 880

Vibration Test of 58T030051-1

Gemini B Adapter Relay Panel  
Assembly.

AD- 856 677

Vibration Test of a 52-85713-339  
Tape Recorder. Volume I.

AD- 856 543

Vibration Test of a 52-85713-339  
Tape Recorder. Volume II.

AD- 856 894

Vibration Test of a 58A880025-1  
Tape Recorder.

AD- 856 537

Vibration Test of the 52-88115-21  
Light Assembly, Photographic.

AD- 856 675

Viscous Effects on the Static  
Stability and Axial-Force  
Characteristics of the NASA Space

Shuttle Orbiter at Mach Number 19.

AD-A018 143

VULNERABILITY OF MANNED ORBITAL  
COMMAND POSTS TO NATURAL SPACE  
RADIATIONS.

AD- 609 501

Wall Temperature Effects on Two-  
and Three-Dimensional Transonic  
Turbulent Boundary Layers.

AD- 767 900

Wind Tunnel Fluctuating Pressure

Test. on a 10 Percent Scale Model  
of the Gemini B Spacecraft at Ames  
Unitary Plan Wind Tunnel.

AD- 856 895

Wiring Harness Specification.

AD- 856 693

TITLE INDEX-13  
UNCLASSIFIED ZOM07

TRA-XM5

# UNCLASSIFIED

## CORPORATE AUTHOR - MONITORING AGENCY

\*ADVISORY GROUP FOR AEROSPACE RESEARCH  
AND DEVELOPMENT NEUILLY-SUR-SEINE  
(FRANCE)

AGARD-CP-265  
Recent Advances in Aeronautical  
and Space Medicine.

AD-A078 360

AGARD-HIGHLIGHTS-77/1  
AGARD Highlights.

AD-A050 761

\*AEROMET LIQUID ROCKET CO SACRAMENTO  
CALIF

Orbit-to-Orbit Shuttle Engine  
Design Study. Book 1. Parametric  
Cycle Study.  
(AFRPL-TR-72-45-BK-1)

AD- 900 190

\*AEROJET-GENERAL CORP SACRAMENTO  
CALIF LIQUID ROCKET DIV

AGC-9180-941-DR-3  
Program Titan IIIM Standard  
Space Launch Vehicle Component  
Development Report for the Titan  
IIIM Stage I Combustion Chamber.

AD- 860 050

\*AERONAUTICAL CHART AND INFORMATION  
CENTER ST LOUIS MO LINGUISTIC  
SECTION

ACID-TC-1033  
THE FLIGHT OF AUTOMATIC  
INTERPLANETARY STATIONS 'VENUS-2'  
AND 'VENUS-3'.  
(TT-66-61646)

AD- 634 931

\*AERONAUTICAL SYSTEMS DIV WRIGHT-  
PATTERSON AFB OHIO

ASD-TR-76-22  
Proceedings of the Multiplex  
Data Bus Conference Held at  
Biltmore Towers Hotel, Dayton, Ohio  
on 3-5 November 1976.

AD-A033 793

\*AEROSPACE CORP EL SEGUNDO CA  
ADVANCED PROGRAMS DIV

TOR-0078(3506-01)-1  
Five Year Plan for Space Test  
Program.

AD-A065 866

\*AEROSPACE CORP EL SEGUNDO CALIF

TR-0078(3724-01)-3  
Shuttle Impact on  
Communications Satellites as Seen  
from the User Viewpoint.  
(SAMSO-TR-78-28)

AD-061 036

\*AEROSPACE CORP EL SEGUNDO CALIF EL  
SEGUNDO TECHNICAL OPERATIONS

TOR-0158(3107-15)-7  
Preliminary Gemini B Guidance  
Equations for the MOL Mission.

AD- 856 690

TOR-0158(3107-15)-8

The Hypersonic Aerodynamic  
Characteristics of the Gemini Re-  
Entry Module Based on a Statistical  
Analysis of Wind Tunnel Test Data.

AD- 856 691

T R-1001(2107-20)-1-A-REV-1  
Orbiting Vehicle Nonmetallic

Materials Combustion and  
Atmospheric Contaminant Control  
Standard for the MOL Orbiting  
Laboratory Program.

AD- 856 742

\*AEROSPACE CORP EL SEGUNDO CALIF  
ENGINEERING SCIENCE OPERATIONS

TR-0077(2901-03)-1  
Optimal Three Burn Orbit  
Transfer.  
(SAMSO-TR-77-79)

AD-A039 257

\*AEROSPACE CORP EL SEGUNDO CALIF  
GUIDANCE AND CONTROL DIV

TR-0078(3451-03)-1  
Station Keeping of the Space  
Shuttle in the Vicinity of a  
Deployed Payload.  
(SAMSO-TR-78-102)

AD-A056 109

\*AEROSPACE CORP EL SEGUNDO CALIF MOL  
SYSTEMS ENGINEERING OFFICE

TOR-0158(3107-15)-10-A  
Environmental and Test  
Requirements Gemini B Spacecraft.

AD- 856 512

TOR-0158(3107-15)-11-A  
Structural Specification Gemini  
B Spacecraft.

AD- 856 517

TOR-0158(3107-20)-1

MOL Safety Evaluation Based on  
Apollo 204 Review Board Findings  
and Recommendations, and Brooks Air  
Force Base Accident Investigation  
Board Conclusions.

AD- 856 687

TOR-0158(3107-20)-2  
MOL Fire Safety Activities  
(Briefing).

AD- 856 524

TOR-0158(3107-28)-2

Wing Harness Specification.

AD- 856 693

TOR-0200(4107-28)-2

Electromagnetic Compatibility  
Requirements MOL Systems Orbiting  
Vehicle.

AD- 856 516

TOR-1001(2107-20)-1

Orbiting Vehicle Nonmetallic  
Materials Combustion and  
Atmospheric Contaminant Control  
Standard for the MOL Orbiting

CORP AUTHOR-MONITOR AGENCY-1  
UNCLASSIFIED ZOM07

UNCLASSIFIED

Laboratory Program.

AD- 856 522

\*AEROSPACE CORP EL SEGUNDO CALIF  
SYSTEMS ENGINEERING OPERATIONS

TOR-0059(6758-01)-14  
Chemical Orbit-to-Orbit Shuttle  
Task Summary.  
(SAMSO-TR-72-144)  
AD- 742 984

TOR-0059(6759-03)-8  
Integrated Data Bus Study.  
AD- 875 858

\*AEROSPACE MEDICAL RESEARCH LAB WRIGHT-  
PATTERSON AFB OH

AMRL-TDR64 33  
RESEARCH ON A WASTE SYSTEM FOR  
AEROSPACE STATIONS.  
AD- 603 013

\*AEROSPACE RESEARCH LABS WRIGHT-  
PATTERSON AFB OHIO

ARL-71-0016  
Optimal Control of Libration  
Point Space Station.  
AD- 724 113

\*AEROSPACE TECHNOLOGY DIV LIBRARY OF  
CONGRESS WASHINGTON D C

ATD-65-101  
SOVIET SPACE EXPLORATION AS  
VIEWED BY EAST GERMAN SPECIALISTS.  
(TT-65-64766)  
AD- 624 575

\*AIR FORCE AERO PROPULSION LAB WRIGHT-  
PATTERSON AFB OH

AFAPL-TR-66-145  
PRE-PHASE I FOR DESIGN,  
FABRICATION, AND ORBITAL TESTING OF  
A SPACE STRUCTURE.  
AD- 815 716

AFAPL-TR-68-118

ASSEMBLY AND MAINTENANCE OF  
LIGHTWEIGHT METALLIC STRUCTURES IN  
SPACE.

AD- 688 266

AFAPL-TR-68-135-VOL-1  
Extravehicular Activities  
System Effectiveness. Volume I  
Phase II Summary Report.  
AD- 847 481

AFAPL-TR-68-135-VOL-3  
Extravehicular Activities  
System Effectiveness. Volume III  
Phase II Effectiveness Computer  
Model.  
AD- 847 482

AFAPL-TR-70-45  
Applications Study of  
Expandable Space Structures.  
AD- 879 707

\*AIR FORCE AERO PROPULSION LAB WRIGHT-  
PATTERSON AFB OHIO

NATIONAL CONFERENCE ON SPACE  
MAINTENANCE AND EXTRAVEHICULAR  
ACTIVITIES (2ND). 6-8 AUGUST 1968,  
LAS VEGAS, NEVADA.  
AD- 688 246

AFAPL-CONF-68-3  
AN ASSESSMENT OF THE  
PRACTICALITY OF ORBITAL  
MAINTENANCE.  
AD- 658 454

\*AIR FORCE FLIGHT DYNAMICS LAB WRIGHT-  
PATTERSON AFB OH

AFAPL-TR-64-25  
TRANSIENT DYNAMIC RESPONSE OF  
ORBITING SPACE STATIONS.  
AD- 613 081

AFAPL-TR-71-64  
Preliminary Handling Qualities  
Requirements for Lifting Re-Entry  
Vehicles during Terminal Flight.  
AD- 731 563

CORP AUTHOR-MONITOR AGENCY-2  
UNCLASSIFIED ZOMQ7

AFFDL-TR-72-39  
Finite Element Modeling and  
Optimization of Aerospace  
Structures.  
AD- 754 915

AFFDL-TR-73-159-VOL-1  
The Mark IV Supersonic-  
Hypersonic Arbitrary-Body Program.  
Volume I. User's Manual.  
AD- 778 443

AFFDL-TR-73-159-VOL-2  
The Mark IV Supersonic-  
Hypersonic Arbitrary-Body Program.  
Volume II. Program Formulation.  
AD- 778 444

AFFDL-TR-73-159-VOL-3  
The Mark IV Supersonic-  
Hypersonic Arbitrary-Body Program.  
Volume III. Program Listings.  
AD- 778 445

\*AIR FORCE FLIGHT DYNAMICS LAB WRIGHT-  
PATTERSON AFB OHIO

AFFDL-TR-72-12  
Recent Notes and Data on  
Interference Heating.  
AD- 747 765

\*AIR FORCE FLIGHT TEST CENTER EDWARDS  
AFB CA

AFFTC-TR-78-30  
Space Shuttle Digital Computer  
Simulation Benchmark.  
AD-A065 480

\*AIR FORCE GEOPHYSICS LAB HANSCOM AFB  
MASS

AFGL-TR-78-0036  
Particle Induced Visual  
Phenomena in Space.  
AD-A053 213

AFGL-TR-78-0087  
Role of Nuclear Stars in the

AER-AIR

UNCLASSIFIED

Light Flashes Observed on Skylab 4,  
AD-A053 214

\* \* \*  
\*AIR FORCE INST OF TECH WRIGHT-  
PATTERSON AFB OH SCHOOL OF SYSTEMS  
AND LOGISTICS  
\* \* \*  
AFIT-LSSR-4-798  
Space Transportation System  
Western Launch Site Construction  
Management Information System - A  
Case Study.  
AD-A077 575

\*AIR FORCE INST OF TECH WRIGHT-  
PATTERSON AFB OHIO  
\* \* \*  
AFIT-CI-76-33  
Astronaut Manual EVA Guidance:  
An Operational Procedure.  
AD-A026 267

\*AIR FORCE INST OF TECH WRIGHT-  
PATTERSON AFB OHIO SCHOOL OF  
ENGINEERING  
\* \* \*  
AFIT/GA/MC/T6D-6  
Maximum Payload, Four-Impulse,  
Non-Coplanar, Orbital Transfers for  
an Upper Stage Vehicle of the Space  
Transportation System.  
AD-A034 758

\* \* \*  
AFIT/GA/MC/T6D-11  
Maximum Payload Orbital  
Transfers for a Space Shuttle Solid-  
Fuel Upper Stage Vehicle.  
AD-A034 947

\* \* \*  
AFIT/GGC/EE/77-10  
A Kalman Filter Design for the  
Space Shuttle Orbiter Inertial  
Measuring Unit During  
Deorbit/Reentry Using Global  
Positioning System Satellite  
Information.  
AD-A055 465

\* \* \*  
GA/MC/75D-4  
Time-Optimal Rendezvous for an  
Upper Stage Vehicle of the Space

Transportation System.  
AD-A019 328

\* \* \*  
GGC/EE/69-17  
OPTIMUM FEEDBACK CONTROL OF A  
SYNODIC SATELLITE.  
AD- 695 043

\*AIR FORCE MATERIALS LAB WRIGHT-  
PATTERSON AFB OH  
\* \* \*  
AFML-TR-72-145  
Rain Erosion Characteristics of  
Thermal Protection System Materials  
at Subsonic Velocities.  
AD- 750 793

\*AIR FORCE MATERIALS LAB WRIGHT-  
PATTERSON AFB OHIO  
\* \* \*  
AFML-TR-75-77  
Skylab 0024 Thermal Control  
Coatings and Polymeric Films  
Experiment.  
(GIDEP-E046-0915)  
AD-A046 208

\* \* \*  
AFML-TR-75-165  
Results of the Polymeric Films  
Skylab 0024 Experiment.  
AD-A046 210

\*AIR FORCE OFFICE OF SCIENTIFIC  
RESEARCH BOLLING AFB DC  
\* \* \*  
AFOSR-64 0991  
THE EFFECT OF ELASTICITY ON THE  
STABILITY OF MANNED ROTATING SPACE  
STATIONS.  
AD- 602 486

\*AIR FORCE ROCKET PROPULSION LAB  
EDWARDS AFB CA  
\* \* \*  
AFRPL-TR-71-1-VOL-1  
Air Force Reusable Rocket  
Engine Program XLR129-P-1. Volume  
I.  
AD- 881 744

\*AIR FORCE ROCKET PROPULSION LAB  
EDWARDS AFB CA  
\* \* \*  
AFRPL-TR-71-117  
Orbit-to-Orbit Shuttle  
Propellant Integration and Handling  
Study.

AD- 621 861

\* \* \*  
AFOSR-66-1641  
EXPERIMENTAL INVESTIGATION OF  
THE EFFECTS OF ELASTICITY ON THE  
STABILITY OF MANNED ROTATING SPACE  
STATIONS.  
AD- 638 705

\* \* \*  
AFOSR-TR-71-0595  
Industrial Chemistry in Space.  
AD- 720 136

\* \* \*  
AFOSR-TR-72-0428  
Ionospheric Aerodynamics  
Related to Space Vehicles, Space  
Shuttles and Satellites.  
AD- 737 406

\* \* \*  
AFOSR-TR-72-1010  
Aeroelastic Stability of Thin  
Shell Structures at Subsonic Mach  
Numbers and the Active Suppression  
of Flutter Phenomena.  
AD- 741 899

\* \* \*  
AFOSR-TR-73-1431  
Aerodynamic Characteristics of  
Two-Dimensional Waverider  
Configurations.  
AD- 765 285

\* \* \*  
AFOSR-TR-76-0965  
Nonequilibrium Stagnation  
Region Aerodynamic Heating of  
Hypersonic Gliding Vehicles.  
AD-A030 389

\*AIR FORCE ROCKET PROPULSION LAB  
EDWARDS AFB CA  
\* \* \*  
AFRPL-TR-71-1-VOL-1  
Air Force Reusable Rocket  
Engine Program XLR129-P-1. Volume  
I.  
AD- 881 744

\* \* \*  
AFRPL-TR-71-117  
Orbit-to-Orbit Shuttle  
Propellant Integration and Handling  
Study.

AIR-AIR

# UNCLASSIFIED

AD- 735 290

AFRPL-TR-72-4-VOL-1  
02/H2 Advanced Maneuvering  
Propulsion Technology Program  
Engine System Studies. Volume I.  
Aerospike Engine Configuration  
Design and Analysis.

AD- 890 753

AFRPL-TR-72-4-VOL-2  
02/H2 Advanced Maneuvering  
Propulsion Technology Program  
Engine System Studies. Volume II.  
25,000 Pound Thrust Bell Engine  
Configuration Design and Analysis.

AD- 894 424

AFRPL-TR-72-45-BK-1  
Orbit-to-Orbit Shuttle Engine  
Design Study. Book 1. Parametric  
Cycle Study.

AD- 900 190

AFRPL-TR-74-5  
Development of a Zero-G Gauging  
System. Volume I.

AD- 779 915

AFRPL-TR-76-62  
Space Shuttle Response to  
Acoustic Combustion Instability in  
the solid Rocket Boosters.

AD-A037 157

\*AMF YORK PA

AMF-372-13008  
Procedural Support Data MOL  
Mission Module Transporter.

AD- 859 125

\*ANALYTIC SERVICES INC FALLS CHURCH  
VA

ANSER-DDN-75-3  
Current and Projected  
Government and Commercial Space  
Activities.

AD-B004 682

\*ARCHER DANIELS MIDLAND CO  
MINNEAPOLIS MINN

SELF-RIGIDIZING EXPANDABLE-  
SANDWICH AEROSPACE SHELTERS AND  
SOLAR COLLECTORS.

AD- 656 747

\*ARMAMENT DEVELOPMENT AND TEST CENTER  
EGLIN AFB FL

ADTC-TR-79-11-VOL-1  
Proceedings of the Biennial  
Guidance Test Symposium (9th) Held  
at Holloman Air Force Base, New  
Mexico on 10-12 October 1979.  
Volume I.

AD-A076 567

\*ARNOLD ENGINEERING DEVELOPMENT CENTER  
ARNOLD AFS TN

AEDC-TR-78-P29  
Effects of Vertical Tail  
Flexibility on the Aerodynamic  
Characteristics of a 0.03-Scale  
NASA Space Shuttle Orbiter at Mach  
Numbers from 0.90 to 1.55.

AD-A062 377

AEDC-TR-78-P54  
Data Verification Tests of a  
0.03-Scale NASA Space Shuttle  
Launch Vehicle at Mach Numbers from  
0.60 to 1.55.

AD-A070 442

AEDC-TR-78-V10  
Heat Transfer Test on the  
NASA/Rockwell International Space  
Shuttle Orbiter at Mach number 8.0  
in AEDC/VKF Tunnel B.

AD-A059 497

AEDC-TR-78-V13  
Infrared and Phase-Change Paint  
Measurements of Heat-Transfer on  
the Space Shuttle Orbiter.

AD-A059 796

AEDC-TR-79-P7

CORP AUTHOR-MONITOR AGENCY-4  
UNCLASSIFIED 20M07

Data Verification Tests of a  
0.02-Scale NASA Space Shuttle  
Launch Vehicle at Mach Numbers from  
0.60 to 1.55.

AD-A069 194

AEDC-TR-79-V11  
Space Shuttle External Tank  
Instrumentation Evaluation.

AD-A070 443

AEDC-TR-79-V12  
Aerothermal Evaluation of the  
Space Shuttle Solid Rocket Booster  
and Solid Rocket Motor Thermal  
Protection System.

AD-A070 444

\*ARNOLD ENGINEERING DEVELOPMENT CENTER  
ARNOLD AIR FORCE STATION TENN

AEDC-TR-69-14  
Simulated Meteoroid Impact  
Testing on a Composite Expandable  
Structure for Spacecraft Airlock  
Application.

AD- 850 512

AEDC-TR-69-41  
Flutter Test of a 0.50-Scale  
MOL Meteoroid Shield Panel at Mach  
Numbers from 1.2 to 2.5.

AD- 848 174

AEDC-TR-69-143  
Effects and Control of  
Contamination from a Scaled MOL  
attitude Control Thruster in a  
Tangential Orientation.

AD- 860 371

AEDC-IR-69-152  
Effects and Control of  
Contamination from a Scaled MOL  
translational Thruster in a  
Longitudinal Orientation.

AD- 861 021

AEDC-TR-71-198  
Dynamic Stability Testing of  
Space Shuttle Configurations during

AMF-ARN



UNCLASSIFIED

<p>Abort Separation at Mach Numbers 1.76 and 2. AD- 731 771</p> <p>AEDC-TR-72-11 Abort Separation, Longitudinal Force, and Moment Characteristics of McDonnell Douglas Booster and Orbiter Space Shuttle Vehicles at Mach Numbers 2.0 to 6.0. AD- 738 645</p> <p>AEDC-TR-72-21 Experimental Investigation of Venting Water into a Vacuum. AD- 893 928</p> <p>AEDC-TR-72-46 Abort Separation Pressure Distributions on McDonnell-Douglas Space Shuttle Configurations at Mach Numbers 2, 3, and 5. AD- 742 995</p> <p>AEDC-TR-72-169 Heat-Transfer and Flow-Field Tests of the North American Rockwell/General Dynamics Convair Space Shuttle Configurations. AD- 755 354</p> <p>AEDC-TR-72-196 Heat-Transfer Investigation of Langley Research Center Delta Wing Configurations at Mach Numbers 8 and 10.5. AD- 755 355</p> <p>AEDC-TR-73-40 NASA-Convair ACS Space Shuttle Study at Mach Number 8.0. AD- 759 578</p> <p>AEDC-TR-73-53 Heat-Transfer and Flow-Field Tests of the McDonnell Douglas-Martin Marietta Space Shuttle Configurations. AD- 759 176</p> <p>AEDC-TR-73-59</p>	<p>Heat-Transfer Tests of Two Space Shuttle Orbiter Configurations at Mach Number 8. AD- 772 687</p> <p>AEDC-TR-73-112 Numerical Calculation of the Subsonic and Transonic Turbulent Boundary Layer on an Infinite Yawed Airfoil. AD- 763 730</p> <p>AEDC-TR-73-156 Wall Temperature Effects on Two- and three-Dimensional Transonic Turbulent Boundary Layers. AD- 767 900</p> <p>AEDC-TR-74-129 Pitch-, Yaw-, and Roll-Damping Characteristics of a Shuttle Orbiter at M = 8. AD-A011 648</p> <p>AEDC-TR-75-2 Real Gas Scale Effects on Hypersonic Laminar Boundary-Layer Parameters Including Effects of Entropy-Layer Swallowing. AD-A018 755</p> <p>AEDC-TR-75-5 Flow-Field Measurements in the Windward Surface Shock Layer of Space Shuttle Orbiter Configurations at Mach Number 8. AD-A012 675</p> <p>AEDC-TR-75-20 Heat-Transfer Tests on the Rockwell International Space Shuttle Orbiter with and without Simulated Protuberances. AD-A012 876</p> <p>AEDC-TR-75-31 Pressure and Heat Transfer Tests on the NASA Space Shuttle External Tank at Mach Number 16. AD-A015 743</p>	<p>AEDC-TR-75-91 viscous Effects on the Static Stability and Axial-Force Characteristics of the NASA Space Shuttle Orbiter at Mach Number 19. AD-A018 143</p> <p>AEDC-TR-75-94 Aerothermal Tests of the Space Shuttle External Tank Insulating Material. AD-A017 497</p> <p>AEDC-TR-75-153 Heat-Transfer Tests of a 0.0175-Scale Model of the Space Shuttle at Mach Numbers 2.5, 3.5, 4.5, and 5.5. AD-A025 080</p> <p>AEDC-TR-76-23 Heat Transfer Tests on the Rockwell International Space Shuttle Orbiter with Boundary-Layer Trips (OH-54). AD-A024 553</p> <p>AEDC-TR-76-49 Studies of the Exhaust Products from Solid Propellant Rocket Motors. AD-A029 569</p> <p>AEDC-TR-76-93 Simulated Thermal Protection Tile Roughness Effects on Windward Surface Heat Transfer on the Rockwell International Space Shuttle Orbiter. AD-A034 733</p> <p>AEDC-TR-77-19 Roughness and Wall Temperature Effects on Boundary-Layer Transition on a 0.0175-Scale Space Shuttle Orbiter Model Tested at Mach Number 8. AD-A038 895</p> <p>AEDC-TR-78-V6 NASA/RI OA 208 and 209</p>
---	---	---

CORP AUTHOR-MONITOR AGENCY-5  
UNCLASSIFIED ZOMQ7

AMF-ARN

# UNCLASSIFIED

Verification Static-Stability and Control-Effectiveness Tests of the Space Shuttle Orbiter Vehicle at Mach Numbers from 2 to 8. AD-A057 080	(FAA-AEE-79-04) AD-A069 127	Major Range Acquisitions for the Space Shuttle/Satellite Control Satellite Era. AD-A038 670
AEDC-TSR-78-V11 Heat-Transfer Tests on the Nose of the Shuttle Orbiter External Tank (FH-15). AD-A058 693	Industrial Chemistry in Space, (AFOSR-TR-71-0595) AD- 720 136	Operations Management of DOD Space Missions in the Shuttle Era. AD-A038 673
AEDC-TSR-78-V15 Test Results from the NASA/Rockwell International Space Shuttle Integrated Vehicle Test (IH 85) Conducted in the AEDC-VKF Tunnel A. AD-A058 141	*CIVIL AND ENVIRONMENTAL ENGINEERING DEVELOPMENT OFFICE TYNDALL AFB FL DETACHMENT 1 (ADTC) CEEDO-TR-77-33 Impact of Space Shuttle Support Facilities Construction on Special Interest Plant Species (Vandenberg AFB, CA). AD-A049 177	*DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA Management of DOD Space Payload Integration in the Space Shuttle Era. AD-A026 384
*BELL AEROSPACE CO BUFFALO N Y Rain Erosion Characteristics of Thermal Protection System Materials at Subsonic Velocities. (AFML-TR-72-145) AD- 750 793	*COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H CRREL-SR-76-7 Skylab Imagery: Application Reservoir Management in New England. AD-A030 329	Management of DOD Space Shuttle Era. AD-A027 552
*BIOTECHNOLOGY INC FALLS CHURCH VA Forecast of Human Factors Technology Issues and Requirements for Advanced Aero-Hydro-Space Systems. AD- 721 713	*CONDUCTRON-MISSOURI ST CHARLES Gemini B Procedures Simulator Initial Version Precision Qualification Test Procedure CEI 58Y010A GBPS Computer Program, AD- 856 847	Shuttle Participation in the Shuttle Program a Management Analysis. AD-A027 552
*BOEING CO SEATTLE WASH D2-8174 Aerodynamic Stability and Control, Data, Model 844-2035. AD- 756 854	*CORNELL AERONAUTICAL LAB INC BUFFALO N Y CAL-BM-2995-F-1 Preliminary Handling Qualities Requirements for Lifting Re-Entry Vehicles during Terminal Flight. (AFFDL-TR-71-64) AD- 731 563	Space Shuttle: A Case Study in Economic Analysis. AD-A033 871
*CALIFORNIA UNIV LIVERMORE LAWRENCE LIVERMORE LAB UCRL-50042-78 Annual Report of the Lawrence Livermore Laboratory to the FAA on the High Altitude Pollution Program-1978.	*CORP AUTHOR-MONITOR AGENCY-6 UNCLASSIFIED ZOM07	*DOUGLAS AIRCRAFT CO LONG BEACH CALIF The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume I. User's Manual. (AFFDL-TR-73-159-VOL-1) AD- 778 443
	*DEFENSE SYSTEMS MANAGEMENT COLL FORT BELVOIR VA	The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume II. Program Formulation. (AFFDL-TR-73-159-VOL-2) AD- 778 444
		The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume III. Program Listings. (AFFDL-TR-73-159-VOL-3) AD- 778 445
	*DEFENSE SYSTEMS MANAGEMENT COLL FORT BELVOIR VA	*DOUGLAS AIRCRAFT CO INC HUNTINGTON BEACH CALIF MISSILE AND SPACE SYSTEMS DIV MOL Zero G Development Test

BEL-DOU

# UNCLASSIFIED

Report. DD Form 1423 Data Item UT-  
(110).

AD- 856 542

CITE Interfaces.

AD- 859 093

DAC-57177

MOL Ground Test Plan:  
development Test Plan. Sequence  
Number 8285. MOL Data Item Number  
UT-101.

AD- 856 521

DAC-57178

MOL Ground Test Plan.  
Qualification Test Plan. Sequence  
Number 8286.

AD- 859 311

DAC-57179

MOL Ground Test Plan.  
Acceptance Test Plan. Volume I.  
Ave Components through Subsystems  
and Age CEI's Sequence Number 8287.  
Data Item Number UT-101.

AD- 856 841

DAC-57180

MOL Ground Test Plan:  
effectiveness Test Plan. Sequence  
Number 8288. Data Item Number UT-  
004.

AD- 856 536

DAC-58780

MOL Fluid Dynamics Test Pretest  
Report. MOL Protuberance Heating  
Wind Tunnel Model. Sequence Number  
8334. Data Item Number UT-135.

AD- 856 515

DAC-60065

MOL Item Test Plan (Computer  
Programs). Computer Program,  
Operational, All Systems Test  
Equipment Group. Sequence Number  
8295. Data Item Number UT-109.

AD- 856 509

DAC-60066

MOL Item Test Plan (Computer  
Programs). Computer Program,  
Compiler, Manned Orbiting  
Laboratory, Test Oriented Language.  
Sequence Number B294.

AD- 856 511

DAC-60150

MOL Zero G Development Test  
Report. DAC Line Item 1AJ32.  
Sequence Number B300.

AD- 856 544

DAC-60199

MOL Rigid Body Fluctuating  
Pressure Test (1AL2). Sequence  
Number B333. Data Item UT-135.

AD- 856 513

DAC-60336

MOL Rigid Body Fluctuating  
Pressure Test (1AL2). Volume I.  
Sequence Number B325. MOL Data  
Item UT-133.

AD- 856 546

\*DOUGLAS AIRCRAFT CO INC SANTA MONICA  
CALIF MISSILE AND SPACE SYSTEMS  
DIV

SM-46257

RADIATION PROTECTION FOR MANNED  
ORBITING SPACE STATIONS.

AD- 615 665

SM-48502

BIOMEDICAL POTENTIAL OF A  
CENTRIFUGE IN AN ORBITING  
LABORATORY.  
(SSD-TDR-64-209-SUPPL.)

AD- 472 550

\*ELECTRONIC SYSTEMS DIV HANSCOM AFB  
MA

ESD-TDR64 164

VULNERABILITY OF MANNED ORBITAL  
COMMAND POSTS TO NATURAL SPACE  
RADIATIONS.

AD- 609 501

\*FEDERAL AVIATION ADMINISTRATION  
WASHINGTON DC OFFICE OF ENVIRONMENT  
AND ENERGY

FAA-AEE-79-04

Annual Report of the Lawrence  
Livermore Laboratory to the FAA on  
the High Altitude Pollution Program-  
1978.

AD-A069 127

\*FOREIGN TECHNOLOGY DIV WRIGHT-  
PATTERSON AFB OHIO

FID-HT-23-591-69

SPACE OBSERVATIONS: SCIENCE  
PUSHES BACK ITS HORIZONS.

AD- 702 322

FID-HT-23-637-69

SCIENTIFIC RESULTS FROM THE  
FLIGHT OF YANTAR AUTOMATIC  
IONOSPHERIC LABORATORIES. PART II.

AD- 704 045

FID-HT-23-675-68

PEOPLE AND SPACE.

AD- 683 158

FID-HT-23-1281-67

THE SYNTHESIS OF A SYSTEM FOR  
OPTIMAL STABILIZATION OF A SPACE  
STATION.

AD- 679 660

FID-HT-23-1477-68

A Soviet Space Station Soon.

AD- 860 583

FID-ID(RS)1-2282-75

Salvut to be Supplied  
Automatically.

AD-A018 540

FID-ID(RS)1-2398-75

The Value of an Orbital Minute.

AD-A018 534

FID-ID(RS)1-0759-78

Space Shuttle.

AD-A066 278

CORP AUTHOR-MONITOR AGENCY-7  
UNCLASSIFIED ZOM07

DDU-FOR

UNCLASSIFIED

\* \* \*  
 FTD-ID(RS)T-1545-78  
 Space Shuttle,  
 AD-A063 248  
 \* \* \*  
 FTD-WT-64-531  
 STATION OUTSIDE THE EARTH,  
 (TT-66-61106)  
 AD- 631 585  
 \* \* \*  
 FTD-TT63 975  
 ON THE WAY TO THE COSMOS,  
 AD- 430 239  
 \* \* \*  
 FTD-TT-64-237  
 NEW DATA ON MARS-1.  
 AD- 601 509  
 \* \* \*  
 FTD-TT-64-770  
 COSMIC RESEARCH, 1964, VOL. 2,  
 NO. 3.  
 AD- 603 012  
 \* \* \*  
 FTD-TT-64-1181  
 COLONIZING OUTER SPACE,  
 (TT-65-62230)  
 AD- 615 230  
 \* \* \*  
 \*FOREIGN TECHNOLOGY DIV WRIGHT-  
 PATTERSON AFB OH  
 \* \* \*  
 FTD-ID(RS)T-0610-79  
 Artificial Heavenly Palaces,  
 AD-A075 198  
 \* \* \*  
 \*GENERAL DYNAMICS CORP GROTON CONN  
 ELECTRIC BOAT DIV  
 \* \* \*  
 U413 64 056  
 RESEARCH ON A WASTE SYSTEM FOR  
 AEROSPACE STATIONS.  
 (AMRL-TDR64 33)  
 AD- 603 013  
 \* \* \*  
 \*GENERAL DYNAMICS CORP SAN DIEGO  
 CALIF CONVAIR AEROSPACE DIV  
 \* \* \*  
 GDC-8NZ70-013-18  
 Orbit-to-Orbit Shuttle  
 Propellant Integration and Handling  
 Study.  
 \* \* \*  
 (AFRPL-TR-71-117)  
 AD- 735 290  
 \*GENERAL DYNAMICS/CONVAIR SAN DIEGO  
 CALIF  
 \* \* \*  
 ASSEMBLY AND MAINTENANCE OF  
 LIGHTWEIGHT METALLIC STRUCTURES IN  
 SPACE.  
 (AFAPL-TR-68-118)  
 AD- 688 266  
 \* \* \*  
 CASO-AFS-75-006-VOL-1  
 Centaur Interim Upper Stage  
 (IUS) System Study. Volume I.  
 Executive Summary.  
 (SAMSO-TR-75-181-VOL-1)  
 AD-A021 401  
 \* \* \*  
 CASO-AFS-75-006-VOL-2  
 Centaur Interim Upper Stage  
 (IUS) System Study. Volume II.  
 Technical.  
 (SAMSO-TR-75-181-VOL-2)  
 AD-A021 415  
 \*GENERAL ELECTRIC CO PHILADELPHIA PA  
 MISSILE AND SPACE DIV  
 \* \* \*  
 CDRL Acceptance Test Plan for  
 Environmental Control Unit.  
 Sequence Number T055. Data Item  
 Number UT-455.  
 AD- 857 013  
 \* \* \*  
 CDRL Acceptance Test Plan for  
 Environmental Monitor Unit.  
 Sequence Number T056. Data Item  
 Number UT455.  
 AD- 857 014  
 \* \* \*  
 Age CEI Design/Performance  
 Verification Test Plan for CEI No.  
 MOL 104A. Transporter - Mission  
 Module for the Manned Orbiting  
 Laboratory (MOL) System. CDRL Item  
 No. T014/UT-454.  
 AD- 857 026  
 \* \* \*  
 Contract End Item Design  
 Performance/Verification. Test  
 \* \* \*  
 CORP AUTHOR-MONITOR AGENCY-8  
 UNCLASSIFIED ZQM07  
 \* \* \*  
 Procedures for MOL Computer  
 Integrated Test Equipment for  
 Mission Payload System Segment (MOL-  
 CITE-MPSS) CDRL Item No. T-050 Data  
 Item No. UT-451.  
 AD- 859 092  
 \* \* \*  
 Checkout System Requirements  
 CITE 400 A.  
 AD- 859 096  
 \* \* \*  
 Quality Assurance Plan for CRDL  
 Item No. R015. Data Item No. UR-  
 418.  
 AD- 859 098  
 \* \* \*  
 Verification Test Plan for  
 Environmental Control Unit CEI  
 109A. Data Item No. UT-454.  
 AD- 859 127  
 \* \* \*  
 67SD8106  
 Critical Design Review Package  
 for Environmental Control Unit CEI  
 No. MOL-109A.  
 AD- 856 831  
 \* \* \*  
 68SD8056  
 Item Test Plan AGE Test Support  
 Programs. CEI No. MOL805A. CDRL  
 item T8D T086. Data Item No. UT-  
 467.  
 AD- 857 021  
 \* \* \*  
 69SD8025  
 GE-AVE Maintainability Program  
 Plan. CDRL Item No. R014. Data  
 Item No. UR-417.  
 AD- 857 017  
 \* \* \*  
 69SD8040  
 Computer Program Category I  
 Test Plan for CEI MOL809A. CDRL  
 item T108. Data Item No. UT-467.  
 AD- 857 019  
 \* \* \*  
 1585-ETP-066  
 CDRL Validation Test Plan for  
 Environmental Monitor Unit.  
 Sequence Number T016. Data Item  
 Number UT454.  
 \* \* \*  
 FOR-GEN



# UNCLASSIFIED

<p>RM-565 Environmental Testing of Closed Pore Insulation (CPI) I - ARC Jet Testing. AD- 756 304</p>	<p>Department of Defense Space Transportation System Orbiter Avionics Software Integration Study. Analysis of Orbiter Systems to Meet MASE Requirements. (SAMSO-TR-79-37) AD-A070 634</p>	<p>AID-U-64-55 DATA C: THE ELEKTRON SPACE SYSTEM, KOSMOS-26 THROUGH 29, THE ZOND-1, AND THE POLET-2. AD- 459 966</p>
<p>RM-570 Environmental Testing of Closed Pore Insulation (CPI). II. Salt Spray Testing. AD- 757 424</p>	<p>INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA IDA/HQ-70-11847 Comparison of Chemical and Nuclear Propulsion for Lunar and Cislunar Transportation Systems, AD- 731 963</p>	<p>AID-66-81 SPACECRAFT UTILIZING THE LIFTING AND BALLISTIC REENTRY TECHNIQUES. PART I. SPACECRAFT MANEUVERING- AND DESCENT-SYSTEM HARDWARE: COMPILATION AND ANALYSIS OF EXTRACTS AND REVIEWS. (TT-67-61101) AD- 647 646</p>
<p>RM-573 Environmental Testing of Closed Pore Insulation (CPI), III - Rain Erosion Testing. AD- 765 392</p>	<p>INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA SCIENCE AND TECHNOLOGY DIV P-687 Comparison of Chemical and Nuclear Propulsion for Lunar and Cislunar Transportation Systems, (IDA/HQ-70-11847) AD- 731 963</p>	<p>*LOCKHEED AIRCRAFT CORP BURBANK CALIF LR17031 A STUDY OF AN ORBITAL MAINTENANCE AND MATERIAL TRANSFER SHUTTLE. (RTD-TR63 4057) AD- 438 517</p>
<p>*HARRY DIAMOND LABS ADELPHI MD HDL-CR-79-056-2 XM587E2/XM724 Electronic Time Fuzes: Developmental Test/Operational Test (DT/OT) II test Phase. AD-A078 807</p>	<p>*INTERAGENCY DATA EXCHANGE PROGRAM IDEP-347-95.00.00-FL-28 TRANSIENT DYNAMIC RESPONSE OF ORBITING SPACE STATIONS. AD- 613 081</p>	<p>*LOCKHEED MISSILES AND SPACE CO SUNNYVALE CALIF LMSC-6-62-64-23 A THEORETICAL METHOD FOR PRECISION RENDEZVOUS STATION- KEEPING. AD- 612 048</p>
<p>*HERCULES INC MAGNA UTAH BACCHUS WORKS Space Shuttle Response to Acoustic Combustion Instability in the solid Rocket Boosters. (AFRPL-TR-76-62) AD-A037 157</p>	<p>*JOHNS HOPKINS UNIV SILVER SPRING MD APPLIED PHYSICS LAB CF-3098 NOTE ON DETERMINING THE OVERALL DISTANCE SCALE OF THE EARTH USING HIGH ALTITUDE SATELLITES. AD- 622 479</p>	<p>*LTV AEROSPACE CORP DALLAS TEX MISSILES AND SPACE DIV MSD-00.1115-VOL-1 Extravehicular Activities System Effectiveness. Volume I phase II Summary Report. (AFAPL-TR-68-135-VOL-1) AD- 847 481</p>
<p>*IBM FEDERAL SYSTEMS DIV HOUSTON TX RES-78-11-1</p>	<p>*LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY DIV FOREIGN SCIENCE BULLETIN, VOLUME 5, NUMBER 4, APRIL 1969. AD- 687 326</p>	<p>MSD-00.1115-VOL-3 Extravehicular Activities System Effectiveness. Volume III phase II Effectiveness Computer Model. (AFAPL-TR-68-135-VOL-3)</p>

HAR-LTV

UNCLASSIFIED

AD- 847 482 \* \* \*  
MSD/ES-2601-VOL-1  
Extravehicular Activities  
System Effectiveness. Volume I  
Phase II Summary Report.  
(AFAPL-TR-68-135-VOL-1)  
AD- 847 481 \* \* \*  
MSD/ES-2601-VOL-3  
Extravehicular Activities  
System Effectiveness. Volume III  
Phase II Effectiveness Computer  
Model.  
(AFAPL-TR-68-135-VOL-3)  
AD- 847 482 \* \* \*  
\*MCDONNELL AIRCRAFT CO ST LOUIS MO  
MAC-058-ASA.04  
Static Test of the Gemini B  
adapter for the Critical  
Combination of Ascent Phase Loads  
and Elevated Temperature.  
AD- 856 653 \* \* \*  
MAC-058-ASB.05  
Ultimate Internal and External  
Pressure Tests of the Reentry  
Module Structure (Pressure Test of  
Static Reentry Module I). Volume  
I.  
AD- 856 889 \* \* \*  
MAC-F573  
Item Test Plan (Computer  
Program) Gemini B Procedures  
Simulator. Sequence Number 29T.  
Data Item U-T-216.  
AD- 856 898 \* \* \*  
MAC-G004-VOL-1  
Gemini B Re-Entry  
Module/Adapter Attachment Faining  
Aerodynamic Heating and Pressure  
Tests in the McDonnell  
Hypervelocity Impulse Tunnel -  
Series I.  
AD- 856 900 \* \* \*  
MAC-G004-VOL-2

Gemini B Re-Entry  
Module/Adapter Attachment Faining  
Aerodynamic Heating and Pressure  
Tests in the McDonnell  
Hypervelocity Impulse Tunnel -  
Series I.  
AD- 856 901 \* \* \*  
\*MCDONNELL AIRCRAFT CORP ST LOUIS MO  
MAC-F373  
Test Plan for Aerodynamic  
Heating and Pressure Tests of a 9-  
Percent Gemini B Re-Entry  
Configuration Model in the  
McDonnell Hypervelocity Impulse  
Tunnel.  
AD- 856 749 \* \* \*  
MAC-F677  
Gemini B Ejection Seat  
Functional Test Air Drop Test Plan.  
AD- 856 746 \* \* \*  
MAC-F746  
Gemini B Structural  
Qualification Test Plan.  
AD- 856 750 \* \* \*  
MAC-F975  
Gemini B - Ejection Seat System  
Test - Dual Ejection Test Plan.  
AD- 856 755 \* \* \*  
MAC-G646  
Test Plan Gemini B Adapter  
Separation Test - Abort Mode.  
AD- 856 756 \* \* \*  
\*MCDONNELL ASTRONAUTICS CO ST LOUIS  
MO  
E217  
Gemini B Spacecraft Systems  
Test Plan.  
AD- 856 897 \* \* \*  
E879  
Gemini B Electronic Systems  
Test Unit (ESTU) Test Plan.  
AD- 856 752 \* \* \*  
CORP AUTHOR-MONITOR AGENCY-11  
UNCLASSIFIED ZOM07

MACASTRO-E734 \* \* \*  
Gemini B Procedures Simulator.  
Performance/Design Requirements.  
AD- 856 820 \* \* \*  
MACASTRO-F203-VOL-2  
Gemini B Aerodynamic Data Book.  
Volume II. Static and Oscillatory  
Aerodynamic Pressures and Airload  
Distributions.  
AD- 856 733 \* \* \*  
MACASTRO-F415-VOL-1  
Gemini B Oxygen Safety Study.  
Volume I. Summary and  
Recommendations.  
AD- 856 739 \* \* \*  
MACASTRO-F415-VOL-2  
Gemini B Oxygen Safety Study.  
Volume II. NASA Gemini  
Environmental Control System Data.  
AD- 856 811 \* \* \*  
MACASTRO-F415-VOL-3  
Gemini B Oxygen Safety Study.  
Volume III. Materials Summary.  
AD- 856 812 \* \* \*  
MACASTRO-F415-VOL-4  
Gemini B Oxygen Safety Study.  
Volume IV. Equipment Review.  
AD- 856 813 \* \* \*  
MACASTRO-F-415-VOL-5  
Gemini B Oxygen Safety Study.  
Volume V. Cabin Egress.  
AD- 856 814 \* \* \*  
MACASTRO-F415-VOL-6  
Gemini B Oxygen Safety Study.  
Volume VI. Procedures - Ground  
Testing and Flight.  
AD- 856 662 \* \* \*  
MACASTRO-F415-VOL-7  
Gemini B Oxygen Safety Study.  
Volume VII. Simplified Two Gas  
System.  
AD- 856 663 \* \* \*

UNCLASSIFIED MCD-MCD

## UNCLASSIFIED

<p>*** MCASTRO-F415-VOL-8 Gemini B Oxygen Safety Study. Volume VIII. Inflight Emergency Operations and Procedures. AD- 856 684</p> <p>*** MCASTRO-F919 Gemini B Flight Effectiveness Model Report. AD- 856 817</p> <p>*** MCASTRO-F920 Gemini B Effectiveness Assessment Plan. AD- 856 753</p> <p>*** MCASTRO-F921 GENINI-B Pre-Ignition Effectiveness Model Report. AD- 856 740</p> <p>*** MCASTRO-G151 Analysis of Crew Escape Initiation Response Characteristics Form Titan IIIM/Gemini B State 'Q', Abort Simulation. AD- 856 902</p> <p>*** MCASTRO-G294 Gemini B Mass Properties Report 3.3 Operational Support Plan for Remote Site Phase. AD- 856 816</p> <p>*MCDONNELL CO ST LOUIS MO *** 058-ADA.03 Gemini B Antenna System Testing. AD- 856 849</p> <p>*** 058-ADA.04 G.B.Q. Antenna Tests. AD- 856 876</p> <p>*** 058-ADA.04-REV-A G. B. Q. Antenna Tests. AD- 856 541</p> <p>*** 058-AED.01</p>	<p>Evaluation of Wire Characteristics for Use on Gemini B. AD- 856 877</p> <p>*** 058-AED.02 Massive Overloads on Teflon, Kapton, and Kynar Insulated Wire in an Oxygen Atmosphere. AD- 856 654</p> <p>*** 058-AED.03 Massive Overload of Kynar (5M974 and 5M975) Insulated Wire in Air. AD- 856 655</p> <p>*** 058-AED.04 Current Rating of 24 Gauge High Strength Alloy Wire. AD- 856 533</p> <p>*** 058-AED.05 Immersion Testing of Teflon Bundles. AD- 856 545</p> <p>*** 058-AEG.01 EMI Test of Gemini B Limit Switches. AD- 856 569</p> <p>*** 058-AEH.01 Gemini B Limit Switches. Spacecraft Pressure Effects. AD- 856 657</p> <p>*** 058-AEI.01.01 Torque vs Motor Input Current for Coolant Pump Motor, P/N 52- 83700-4C3, S/N 123-111. AD- 856 652</p> <p>*** 058-AEI.01.03 Coolant Pump Power Inverter - Motor Running Characteristics. AD- 856 878</p> <p>*** 058-AEI.01.04 Functional Tests on Two Gemini B Coolant Pump Assemblies.</p> <p>CORP AUTHOR-MONITOR AGENCY-12 UNCLASSIFIED ZOM07</p>	<p>AD- 856 574</p> <p>*** 058-AEI.01.05 Functional Tests on Two Coolant Pump Assemblies. AD- 856 879</p> <p>*** 058-AEI.01.06 Coolant Pump Power Inverter - Breadboard Evaluation Testing. AD- 856 665</p> <p>*** 058-AEI.02 Coolant Pump Assembly, Low Temperature Start Test. AD- 856 670</p> <p>*** 058-AEM.01 Small Gauge Wire Overload Protection Evaluation. AD- 856 529</p> <p>*** 058-AGF.01 Guidance and Control Mechanics Test - Attitude Control System Analytical Performance Verification. AD- 856 672</p> <p>*** 058-AHC.01 Vibration Qualification Test of Shock Mounted 52-88722-5 Low Range Pressure Transducer Gemini B-GBQ. AD- 856 880</p> <p>*** 058-AHF.01 Vibration Test of the 52-88115- 21 Light Assembly, Photographic. AD- 856 675</p> <p>*** 058-AHI.01 Vibration Test of a 58A880025-1 Tape Recorder. AD- 856 537</p> <p>*** 058-AKA.04 Gemini B Blast Shield: Mechanical Properties of Aluminum Flexcore. AD- 856 573</p>	<p>MCD-MCD</p>
---	---	---	----------------



UNCLASSIFIED

058-AKA.04.02 Tension and Shear Strength of Inserts in the Gemini B Blast Shield. AD- 856 669	058-ARB.04 Heat Shield Hatch Mechanism - Simulated Altitude and Temperature Functional Test. AD- 856 885	AD- 856 890
058-AKA.05 Subscale Rocket Impingement - Blast Shield and Laboratory Tunnel Specimen. AD- 856 881	058-ARB.04.01 Heat Shield Hatch Acceptance Test for Functional Fit at Temperature. AD- 856 656	058-ATC.02 Condensate Wetting of Suit Heat Exchanger Water Separator Plates. AD- 856 891
058-AKA.07 Physical Properties of Vacuum De-Oiled DC-325 Ablative Material. AD- 856 671	058-ARB.04.02 Heat Shield Hatch Acceptance Test for Functional Fit at Temperature. AD- 856 886	058-ATC.03 Interface Heat Exchanger Heat Transfer Element Test. AD- 856 892
058-ALC.02 Gemini B Orbital Storage Test of Reentry Control System Engine Propellant Valves. AD- 856 882	058-ASA.03 Structural and Functional Test of the Gemini B Adapter Ground Coolant Supply Umbilical Disconnect. AD- 856 570	058-ATC.04 Interface Heat Exchanger Interstitial Material Element Test. Heat Transfer. AD- 856 667
058-AMA.07 Development Test of 2100 FLSC cutter Assembly with Dual Titanium Straps. AD- 856 553	058-ASA.05 Torque Versus Preload. Gemini B RV/Adapter Tie Strap. AD- 856 668	058-ATC.05 Separation Test of Simulated Gemini B Interface Heat Exchanger Colglates. AD- 856 551
058-AMA.08 FLSC Cutter Assembly/Dual Titanium Straps Gap Test. AD- 856 883	058-ASB.02 Static Test of the Hoist Loop Support Fitting. AD- 856 887	058-ATC.06 Reverse Pressure Effect on Suit Demand Regulator. AD- 856 673
058-AMA.13 Performance Comparison of Gemini B Z191 MDF Explosive (DIPAM) to NASA Gemini Z191 MDF Explosive (RDX). AD- 856 540	058-ASB.03 Static Test of Recovery Parachute Aft Bridle Fitting and Support Structure. AD- 856 888	058-ATC.08 Interface Heat Exchanger System Test. AD- 856 674
058-AMB.01 Dissection of Hatch Actuator Breech Cartridge, P/N A218-10 (15-1006). AD- 856 651	058-ASB.04 Gemini B Large Pressure Bulkhead Hatch Element Strength Verification Test. AD- 856 538	058-ATD.02.01 Re-Entry Module/Adapter Interconnect Fairing Aerodynamic Heating Wind Tunnel Tests AEDC Tunnel B. AD- 856 658
058-AMD.01 Hatch Actuator Breech Combustible Material Evaluation. AD- 856 884	058-ATC.01 Gemini B Interface Heat Exchanger Flow Distribution Test. CORP AUTHOR-MONITOR AGENCY-13 UNCLASSIFIED ZOMD7	058-AVB.04 Vibration Test of 58T030051-1 Gemini B Adapter Relay Panel Assembly. AD- 856 677
		058-AVB.07-VOL-1 Vibration Test of a 52-85713-339 Tape Recorder. Volume 1. AD- 856 543

MCD-MCD

UNCLASSIFIED

058-AVB-07-VOL-2 Vibration Test of a 52-85713- 339 Tape Recorder. Volume II. AD- 856 894	for IMU Auxiliary Age Platform Alignment Mount Reference 52E270006, IMU Test Point Panel 52E270008, Three-Axis Platform Dolly 52E270036, IMU Test Cable Set 52E270053. AD- 857 174	for Squib Simulator 52E400005. AD- 857 169
058-AVD.02 Wind Tunnel Fluctuating Pressure Tests on a 10 Percent Scale Model of the Gemini B Spacecraft at Ames Unitary Plan Wind Tunnel. AD- 856 895	AD- 857 174 52E270053. Dolly 52E270036, IMU Test Cable Set 52E270008, Three-Axis Platform 52E270006, IMU Test Point Panel Alignment Mount Reference for IMU Auxiliary Age Platform	AD- 857 158 52E420008, 52E420024. Purge Units for Fuel and Oxidizer Flush and Operation and Service Manual 85-10-93 AD- 857 169
058-AWC.02 RCS Propellant Tank Thermostat Test. AD- 856 896	AD- 857 140 Console 52E270012, for Time Reference System EFC Operation and Service Manual 85-10-62 AD- 857 174	AD- 857 142 52E440008, for DC-DC Converter EFC Console Operation and Service Manual 85-10-104 AD- 857 152
85-10-43 Operation and Service Manual for Umbilical Cable Tester 52E200004, AD- 857 159	AD- 857 141 for IMU EFC Test Console 52E270032, Operation and Service Manual E-10-65 AD- 857 154	AD- 857 151 52E440039. for Accelerometer Static Test Unit Operation and Service Manual 85-10-110 AD- 857 164
85-10-47 Operation and Service Manual for Relay Panel EFC Console 52E230010, AD- 857 170	AD- 857 156 Assembly 52E270062, for Guidance and Control Recorder Operation and Service Manual 85-10-73 AD- 857 173	AD- 857 177 52E440065. and Timing Distribution System for Time Code Generator 52E440027 Operation and Service Manual 85-10-118 AD- 857 177
85-10-54 Operation and Service Manual for Spacecraft Battery Charger 52E230075, AD- 857 176	AD- 857 153 recorder 52E270069, for Guidance and Control EFC Operation and Service Manual 85-10-75 AD- 857 173	*MCDONNELL DOUGLAS ASTRONAUTICS CO HUNTINGTON BEACH CALIF AD- 857 177
85-10-56 Operation and Service Manual for Spacecraft Battery Balancing Unit 52E230131. AD- 857 146	AD- 857 172 for Portable Pyrotechnic Tester 52E400004, Operation and Service Manual 85-10-87 AD- 857 172	MDC-G5973-VOL-1 Delta Interim Upper Stage System Study. Volume I. Executive Summary. (SAMSO-TR-75-178-VOL-1) AD-A021 416
85-10-59 Operation and Service Manual AD- 857 146	AD- 857 172 for Portable Pyrotechnic Tester 52E400004, Operation and Service Manual 85-10-87 AD- 857 172	MDC-G5973-VOL-2 Delta Interim Upper Stage AD- 857 172

CORP AUTHOR-MONITOR AGENCY-14  
UNCLASSIFIED ZOM07

MCD-MCD

UNCLASSIFIED

System Study. Volume II. Technical Report.  
(SAMSO-TR-75-178-VOL-2)  
AD-A021 417

\*MCDONNELL DOUGLAS ASTRONAUTICS CO  
HUNTINGTON BEACH CALIF WESTERN DIV

DAC-62611-VOL-1

MOL Rigid Body Fluctuating Pressure Test (1AL2). Volume I. Sequence Number 8329. MOL Data Item UT-134.

AD- 856 743

DAC-62611-VOL-2

MOL Rigid Body Fluctuating Pressure Test (1AL2). Volume II. Sequence Number 8329. Data Item Number UT-134.

AD- 856 554

DAC-62731

MOL Preliminary Data Report of the MOL Protuberance Heat Transfer Test (1AL1). Volume I. Data Item Number UT-132.

AD- 857 160

DAC-62746

MOL Effectiveness Program Status Report. Fourth Quarter 1968. Sequence Number 8428. Data Item No. UR-116.

AD- 857 161

DAC-62749

MOL Fluid Dynamics Preliminary Data Report: Thrustor Plume Tests. Sequence Number 8319. Item Data Number UT-132.

AD- 856 737

DAC-62815

MOL Effectiveness Program Status Report. First Quarter 1969. Sequence Number 8428. Data Item No. UR-116.

AD- 857 162

\*MCDONNELL DOUGLAS ASTRONAUTICS CO

SANTA MONICA CALIF WESTERN DIV

DAC-59818

MOL Fluid Dynamics Test Pretest Report: Test Line Item 1A35. MOL flutter Test. LM Meteoroid Shield Half-Scale Model. Sequence Number 8332. Data Item Number UT-135.

AD- 856 548

DAC-62482

MOL Mass Properties Report 3.2: Verification Plan. Sequence Number 8256. Data Item Number S-66.

AD- 856 523

\*MCDONNELL DOUGLAS ASTRONAUTICS CO ST  
LOUIS MO EASTERN DIV

MOL Baseline Requirements for

Central, Test, and Reentry Modules of the Gemini B Computer Program. Volume III. MOL Baseline Equations Document. Part III. Data Item Number UC-228: Reentry Module Requirements.

AD- 856 741

MOL Baseline Requirements for

Central, Test, and Reentry Modules of the Gemini B Computer Program. Volume III. MOL Baseline Equations Document. Part I. Data Item Number UC-228: System Requirements. Central Module Requirements.

AD- 856 771

MOL Baseline Requirements for

Central, Test, and Reentry Modules of the Gemini B Computer Program. Volume III. MOL Baseline Equations Document. Part II. Data Item Number UC-228: Test Module Requirements.

AD- 856 772

B5-10-7

Operation and Service Manual for Gemini B/Laboratory Electrical Interface Substitute 58E040503.

CORP AUTHOR-MONITOR AGENCY-15  
UNCLASSIFIED ZOMQ7

AD- 856 773

B5-10-10

Operation and Service Manual for Coolant Fluid Transfer Kit 52E180184.

AD- 856 770

B5-10-14

Operation and Service Manual for ECS EFC High Pressure Bench 52E180011.

AD- 857 139

B5-10-18

Operation and Service Manual for 6000 PSIG Oxygen Supply Cart 58E181231.

AD- 856 776

B5-10-20

Operation and Service Manual for ECS Primary O2 System High Pressure Leak Rate Tester 52E180193.

AD- 857 137

B5-10-22

Operation and Service Manual for LOX and LN2 Installation Kits 52E180178.

AD- 856 779

B5-10-23

Operation and Service Manual for GDH High Pressure Regulator Panel 52E180030.

AD- 856 780

B5-10-24

Operation and Service Manual for Spacecraft ECS Test Console 52E180076.

AD- 856 781

B5-10-27

Operation and Service Manual for ECS Coolant System Leak Rate Tester 52E180150.

AD- 856 782

MCD-MCD

# UNCLASSIFIED

85-10-31 Operation and Service Manual for Dual Gas Flow Control Panel 58E181228. AD- 856 784	85-10-99 Operation and Service Manual for Helium Leak Detector Cabinet 52E420097. AD- 856 804	H048 Extravehicular Crew Transfer Test Report. AD- 856 903
85-10-32 Operation and Service Manual for ECS Primary O2 and Water System Low Pressure Leak Rate Tester 52E180194. AD- 857 138	85-10-100 Operation and Service Manual for High Pressure GN2/He Pressurization Panel 58E421218. AD- 856 805	* * * MCDONNELL DOUGLAS-G867 Gemini B Orbiting Vehicle Effectiveness Assessment Plan Report. AD- 856 815
85-10-50 Operation and Service Manual for Blockhouse Power Backup Battery Rack :2E230049 and External Power Control and Monitor Backup Battery Rack 52E230058. AD- 856 788	85-10-115 Operation and Service Manual for T/M Remote Displays Power Supply Assembly 52E440052. AD- 856 808	* * * MCDONNELL DOUGLAS-GCTN-73 Description of Retrograde Time Predict and Orbit Navigation Simulation Program (KAK2) Gemini B. AD- 857 031
8-5-10-57 Operation and Service Manual for Attitude Control System Electronics EFC Console 52E270002. AD- 856 790	85-10-116 Operation and Service Manual for Split Phase Converter 52E440049. AD- 856 809	* * * MCDONNELL DOUGLAS-GCTN-87 Program Description for Digital Six-Degree-of-Freedom Reentry Simulation. Gemini B. AD- 857 030
85-10-58-VOL-1 Operation and Service Manual for Computer System Test Console 52E270003. Volume 1. AD- 856 791	85-10-117 Operation and Service Manual for Telemetry Control and Checkout Console 52E440063. AD- 856 810	* * * *MCDONNELL DOUGLAS CORP ST LOUIS MO * * *
85-10-58-VOL-2 Operation and Service Manual for Computer System Test Console 52E270003. Volume 2. AD- 857 165	F203 Gemini B Aerodynamic Data Book. Volume I. Aerodynamic Coefficients. AD- 856 551	85-10-1 Operation and Service Manual for Spacecraft Transportation Trailers 52E010016. AD- 856 767
85-10-83 Operation and Service Manual for Air Data System Tester 52E360013. AD- 856 796	F650 Category I Test Plan Gemini B Procedures Simulator. AD- 856 899	85-10-3 Operation and Service Manual for Ejection Seat Functional Test Fixture 52E040039. AD- 856 768
85-10-86 Operation and Service Manual for Rocket Pressure Test Kit 52E400002. AD- 856 797	G525-ADD-1 Extravehicular Crew Transfer Test Report July 1968. AD- 856 875	* * * 85-10-4 Operation and Service Manual for Hatch Actuator Test Fixture 52E040094. AD- 856 769
	H019-1 Gemini B Safety Program Status Report. AD- 856 819	85-10-8 Operation and Service Manual for Gemini B/MOL/L/V Electrical Interface Substitute 58E040504. AD- 856 774
		85-10-13 Operation and Service Manual

CORP AUTHOR-MONITOR AGENCY-16  
UNCLASSIFIED ZOM07

MCD-MCD

UNCLASSIFIED

for ECS EFC Low Pressure Bench 52E180010, AD- 856 775	AD- 856 802	52E270023, Volume III, Part I. AD- 856 793
85-10-15 Operation and Service Manual for ECS EFC Coolant Bench 52E180013. AD- 857 143	85-10-45 Operation and Service Manual for Sequential System Control and Monitor 52E230004, AD- 857 144	85-10-64-VOL-3-PT-2-SECT-4 Operation and Service Manual for Computer EFC Test Console 52E270023, Volume III, Part II, Section IV, List of Subassemblies and Diagrams. AD- 856 794
85-10-19 Operation and Service Manual for Spacecraft Command System Checkout and Monitor 58E190513. AD- 856 777	85-10-46 Operation and Service Manual for External Power System Control and Monitor 52E230005 Spacecraft and Module Test Power Supply 52E230038 Blockhouse DC Power Supply 52E230008. AD- 856 786	85-10-70 Operation and Service Manual for Hand Controller Tester Kit 52E270049, AD- 856 795
85-10-21 Operation and Service Manual for Spacecraft Leakage Tester 52E180027. AD- 856 778	85-10-48 Operation and Service Manual for Sequence Control and Monitor Console 52E230012 and Electronic Timer Control Panel 52E270048, AD- 856 787	85-10-77 Operation and Service Manual for ACPU System Tester 52E270086. AD- 857 157
85-10-29 Operation and Service Manual for Spacecraft Ground Cooling Auxiliary Refrigeration Unit 52E180172, AD- 856 783	85-10-53 Operation and Service Manual for Spacecraft Battery Load Bank 52E230073, AD- 856 789	85-10-81 Operation and Service Manual for Computer Data Display System 58E270803. AD- 857 149
85-10-34 Operation and Service Manual for HF and Audio EFC Test Bench 52E19001, AD- 857 145	85-10-61 Operation and Service Manual for IMU Pressurization Kit 52E270010. AD- 857 167	85-10-94 Operation and Service Manual for Propulsion Components EFC console 52E420010. AD- 857 147
85-10-36 Operation and Service Manual for C and S Beacon EFC Test Bench 52E190003, AD- 856 801	85-10-63 Operation and Service Manual for Inertial Platform Test Console 52E270020, AD- 856 792	85-10-96 Operation and Service Manual for Nitrogen and Helium Pressurization Units 52E420013, 52E420014, AD- 856 803
85-10-38 Operation and Service Manual for C-Band Antenna Probe Assembly 52E190012, AD- 856 785	85-10-64-VOL-2 Operation and Service Manual for Computer EFC Test Console 52E270023, Volume II. AD- 857 166	85-10-99 Operation and Service Manual for First and Second Stage Facility N2 Regulators 52E420136, 52E420056. AD- 857 155
85-10-44 Operation and Service Manual for Spacecraft Sequence Recorder 52E230003.	85-10-64-VOL-3-PT-1 Operation and Service Manual for Computer EFC Test Console	85-10-105 Operation and Service Manual for PCM Telemetry Ground Station 52E440011.

CORP AUTHOR-MONITOR AGENCY-17  
UNCLASSIFIED ZOM07

MCD-MCD

# UNCLASSIFIED

AD- 857 171 \* \* \*  
 85-10-107  
 Operation and Service Manual  
 for Standard Temperature Monitor  
 System 52E440044 and Harness  
 Assembly 52E440033.  
 AD- 857 168 \* \* \*  
 85-10-111  
 Operation and Service Manual  
 for Spacecraft Instrumentation  
 System Test Set 52E440040.  
 AD- 856 806 \* \* \*  
 85-10-112  
 Operation and Service Manual  
 for Re-Entry Module Instrumentation  
 Simulator 52E440041.  
 AD- 856 807 \* \* \*  
 \*MICHIGAN UNIV ANN ARBOR DEPT OF  
 AEROSPACE ENGINEERING \* \* \*  
 Ionospheric Aerodynamics  
 Related to Space Vehicles, Space  
 Shuttles and Satellites.  
 (AFOSR-TR-72-0428)  
 AD- 737 406

\*MITRE CORP BEDFORD MASS \* \* \*  
 MITRE TM-4073  
 VULNERABILITY OF MANNED ORBITAL  
 COMMAND POSTS TO NATURAL SPACE  
 RADIATIONS.  
 (ESD-JR64 164)  
 AD- 609 501

\*NATIONAL AERONAUTICAL ESTABLISHMENT  
 OTTAWA (ONTARIO) \* \* \*  
 On Dynamic Stability Testing of  
 Unconventional Configurations.  
 AD- 721 971 \* \* \*  
 Example of Dynamic Interference  
 Effects between Two Oscillating  
 Vehicles.  
 AD- 772 888

\*NATIONAL RESEARCH COUNCIL OF CANADA  
 OTTAWA (ONTARIO) \* \* \*  
 Supersonic Dynamic Stability  
 Experiments on the Space Shuttle.  
 AD- 748 562 \* \* \*  
 Dynamic Stability Testing of  
 Aircraft - Needs Versus  
 Capabilities.  
 AD- 773 160

\*NATIONAL RESEARCH COUNCIL OF CANADA  
 OTTAWA (ONTARIO) DIV OF MECHANICAL  
 ENGINEERING \* \* \*  
 DME/NAE-1972(1)  
 Quarterly Bulletin of the  
 Division of Mechanical Engineering  
 and the National Aeronautical  
 Establishment.  
 AD- 743 096

\*NAVAL AIR DEVELOPMENT CENTER  
 WARMINGSTER PA CREW SYSTEMS DEPT  
 \* \* \*  
 NADC-72063-CS  
 G Protective Tilting Aircraft  
 Seats.  
 AD- 741 202

\*NAVAL OCEAN SYSTEMS CENTER SAN DIEGO  
 CA \* \* \*  
 NOSC/TR-144  
 A Remote, Unmanned Dewatering  
 System for Recovery of the Solid  
 Rocket Booster of the Space Shuttle  
 Program.  
 AD-A063 077

\*NAVAL POSTGRADUATE SCHOOL MONTEREY  
 CALIF \* \* \*  
 A Mathematical Model for the  
 Longitudinal Control System of the  
 Space Shuttle Orbiter.  
 AD-A041 158

\*NAVAL UNDERSEA CENTER SAN DIEGO  
 CALIF

CORP AUTHOR-MONITOR AGENCY-18  
 UNCLASSIFIED ZOM07

NUC-TP-514 \* \* \*  
 Solid Rocket Booster Dewatering  
 System.  
 (GIDEP-E060-0566)  
 AD-A028 742

\*NORTH AMERICAN AVIATION INC DOWNEY  
 CALIF SPACE AND INFORMATION  
 SYSTEMS DIV \* \* \*  
 SID-64-43  
 TRANSIENT DYNAMIC RESPONSE OF  
 ORBITING SPACE STATIONS.  
 (AFFDL-TDR-64-25)  
 AD- 613 081

\*OFFICE OF NAVAL RESEARCH LONDON  
 (ENGLAND) \* \* \*  
 CNRL-R-5-72  
 New Shock Tube Laboratory at  
 Aachen, Germany.  
 AD- 741 191

\*POLYTECHNIC INST OF BROOKLYN  
 FARMINGDALE N Y DEPT OF AEROSPACE  
 ENGINEERING AND APPLIED MECHANICS  
 \* \* \*  
 PIBAL-72-32  
 Aerodynamic Characteristics of  
 Two-Dimensional Waverider  
 Configurations.  
 (AFOSR-TR-73-1431)  
 AD- 765 285

\*PRATT AND WHITNEY AIRCRAFT WEST PALM  
 BEACH FLA FLORIDA RESEARCH AND  
 DEVELOPMENT CENTER \* \* \*  
 PWA-FR-3832-VOL-1  
 Air Force Reusable Rocket  
 Engine Program XLR129-P-1. Volume  
 I.  
 (AFRPL-TR-71-1-VOL-1)  
 AD- 881 744

\*PRINCETON UNIV N J \* \* \*  
 ELECTRICAL POWER SYSTEMS FOR  
 THE MANNED ORBITING LABORATORY.

MIC-PRI

# UNCLASSIFIED

AD- 624 668

\*RAND CORP SANTA MONICA CALIF \* \* \*

ADVANCED SYSTEMS TESTING ON A  
MANNED ORBITAL SPACE STATION.  
AD- 601 899 \* \* \*

P-3570  
ORBITAL BASING: KEY TO LOW  
COST SPACE OPERATIONS,  
AD- 655 342 \* \* \*

RM-4520-PR  
A MATHEMATICAL MODEL OF SUPPLY  
SUPPORT FOR SPACE OPERATIONS.  
AD- 615 165 \* \* \*

RM-6244-1-PR  
The Space Shuttle as an Element  
in the National Space Program,  
AD- 729 770 \* \* \*

\*RESEARCH AND TECHNOLOGY DIV BOLLING  
AFB DC \* \* \*

RTD-TDR63 4057  
A STUDY OF AN ORBITAL  
MAINTENANCE AND MATERIAL TRANSFER  
SHUTTLE.  
AD- 438 517 \* \* \*

\*ROCKETDYNE CANOGA PARK CALIF \* \* \*

R-8807-1  
O2/H2 Advanced Maneuvering  
Propulsion Technology Program  
Engine System Studies, Volume I.  
Aerospike Engine Configuration  
Design and Analysis.  
(AFRPL-TR-72-4-VOL-1)  
AD- 890 753 \* \* \*

R-8807-2  
O2/H2 Advanced Maneuvering  
Propulsion Technology Program  
Engine System Studies, Volume II.  
-25,000 Pound Thrust Bell Engine  
Configuration Design and Analysis.  
(AFRPL-TR-72-4-VOL-2)  
AD- 894 424 \* \* \*

\*ROCKWELL INTERNATIONAL CORP DOWNEY  
CALIF SPACE DIV \* \* \*

SO-75-SA-0135  
Space Test Program Standard  
Satellite Launch Optimization  
Study.  
(SAMSO-TR-75-276)  
AD-A018 177 \* \* \*

\*SCHOOL OF AEROSPACE MEDICINE BROOKS  
AFB TEX FLIGHT NURSING BRANCH \* \* \*

SAM-TR-65-221  
CLINICAL ASPECTS OF AEROSPACE  
NURSING,  
AD- 623 967 \* \* \*

\*SCHOOL OF AEROSPACE MEDICINE BROOKS  
AFB TEX PHYSIOLOGY BRANCH \* \* \*

DISSOLVED NITROGEN AND BENDS IN  
OXYGEN/NITROGEN MIXTURES DURING  
EXERCISE AT DECREASED PRESSURES,  
AD- 620 625 \* \* \*

\*SCHOOL OF AEROSPACE MEDICINE BROOKS  
AFB TEX \* \* \*

SAM-TR-75-45  
Interruption of Denitrogenation  
by Air-Breathing.  
AD-A020 049 \* \* \*

\*SPACE AND MISSILE SYSTEMS  
ORGANIZATION LOS ANGELES AIR FORCE  
STATION CALIF \* \* \*

MOL-CITE Hardware/Software  
Interface Definition Document.  
Revision B.  
AD- 859 095 \* \* \*

\*SPACE AND MISSILE SYSTEMS  
ORGANIZATION LOS ANGELES CA \* \* \*

SAMSO-TR-72-144  
Chemical Orbit-to-Orbit Shuttle  
Task Summary.  
AD- 742 984 \* \* \*

SAMSO-TR-74-155  
Department of Defense Space  
Shuttle on-Board Software  
Requirements.  
AD- 785 123 \* \* \*

SAMSO-TR-75-178-VOL-1  
Delta Interim Upper Stage  
System Study, Volume I. Executive  
Summary.  
AD-A021 415 \* \* \*

SAMSO-TR-75-178-VOL-2  
Delta Interim Upper Stage  
System Study, Volume II. Technical  
Report.  
AD-A021 417 \* \* \*

SAMSO-TR-75-181-VOL-1  
Centaur Interim Upper Stage  
(IUS) System Study, Volume I.  
Executive Summary.  
AD-A021 401 \* \* \*

SAMSO-TR-75-181-VOL-2  
Centaur Interim Upper Stage  
(IUS) System Study, Volume II.  
Technical.  
AD-A021 415 \* \* \*

SAMSO-TR-75-261  
Department of Defense Space  
Transportation System Mission  
Operations Systems Definition  
Mission Assessment Report:  
Operations Design Mission A.  
AD-A018 215 \* \* \*

SAMSO-TR-75-262  
DOD/STS Mission Operations  
Systems Definition Mission  
Assessment Report: Operations  
Design Mission B.  
AD-A019 274 \* \* \*

SAMSO-TR-75-276  
Space Test Program Standard  
Satellite Launch Optimization  
Study.  
AD-A018 177 \* \* \*

CORP AUTHOR-MONITOR AGENCY-19  
UNCLASSIFIED ZOM07

RAN-SPA

# UNCLASSIFIED

SAMSO-TR-76-39  
Department of Defense Space  
Transportation System Mission  
Operations System Definition -  
Computational Function Allocation.  
AD-A022 864

SAMSO-TR-79-79  
Optimal Three Burn Orbit  
Transfer.  
AD-A039 257

SAMSO-TR-77-116  
Department of Defense Space  
Transportation System (DOD/STS)  
Mission Operations Systems  
Definition Mission Assessment  
Report: Operations Design Mission  
A.  
(SAMSO-TR-77-116)  
AD-A045 100

SAMSO-TR-77-188  
STS Utilization Study  
Experiment Assessments.  
AD-A064 766

SAMSO-TR-77-189  
STS Utilization Study.  
AD-A064 681

SAMSO-TR-77-190  
Standard Test Rack Exploitation  
Study.  
AD-A064 773

SAMSO-TR-78-28  
Shuttle Impact on  
Communications Satellites as Seen  
from the User Viewpoint.  
AD-A061 036

SAMSO-TR-78-102  
Station Keeping of the Space  
Shuttle in the Vicinity of a  
Deployed Payload.  
AD-A056 109

SAMSO-TR-78-145  
Standard Test Rack Concept  
Definition Study. Manned Interface  
Definition.

AD-A065 097

SAMSO-TR-78-146  
Standard Test Rack. Concept  
Definition Study. Structural  
Analysis Report.  
AD-A056 147

SAMSO-TR-79-37  
Department of Defense Space  
Transportation System Orbiter  
Avionics Software Integration  
Study. Analysis of Orbiter Systems  
to Meet MASE Requirements.  
AD-A07 634

\*SPACE AND MISSILE SYSTEMS  
ORGANIZATION LOS ANGELES CALIF

Environmental Impact Analysis  
Process. Environmental Impact  
Statement Space Shuttle Program  
Vandenberg AFB, California.  
AD-A060 462

\*SPACE SYSTEMS DIV LOS ANGELES AFS CA

SSD-TDR-64-209-SUPPL.  
BIOMEDICAL POTENTIAL OF A  
CENTRIFUGE IN AN ORBITING  
LABORATORY.  
AD- 472 550

\*TEXAS UNIV AUSTIN DEPT OF AEROSPACE  
ENGINEERING AND ENGINEERING  
MECHANICS

Aeroelastic Stability of Thin  
Shell Structures at Subsonic Mach  
Numbers and the Active Suppression  
of Flutter Phenomena.  
(AFOSR-TR-72-1010)  
AD- 741 899

\*TRW DEFENSE AND SPACE SYSTEMS GROUP  
REDONDO BEACH CALIF

TRW-26937-6032-TU-00  
Department of Defense Space  
Transportation System Mission  
Operations System Definition -

CORP AUTHOR-MONITOR AGENCY-20  
UNCLASSIFIED  
ZOM07

Computational Function Allocation.  
(SAMSO-TR-76-39,  
AD-A022 864

TRW-26937-6136-TU-00  
Department of Defense Space  
Transportation System (DOD/STS)  
Mission Operations Systems  
Definition Mission Assessment  
Report: Operations Design Mission  
A.  
(SAMSO-TR-77-116)  
AD-A045 100

TRW-31933-6031-RU-00  
STS Utilization Study  
Experiment Assessments.  
(SAMSO-TR-77-183)  
AD-A064 766

TRW-31933-6032-RU-00  
STS Utilization Study.  
(SAMSO-TR-77-183)  
AD-A064 681

\*TRW SPACE TECHNOLOGY LABS REDONDO  
BEACH CALIF

INSTABILITY OF SPINNING SPACE  
STATIONS DUE TO CREW MOTION.  
(AFOSR-65-2472)  
AD- 621 861

\*TRW SYSTEMS GROUP REDONDO BEACH  
CALIF

16740-6003RU-00  
Development of a Zero-G Gauging  
System. Volume I.  
(AFRPL-TR-74-5)  
AD- 779 915

TRW-25475-6003-TU-00  
Department of Defense Space  
Shuttle on-Board Software  
Requirements.  
(SAMSO-TR-74-155)  
AD- 785 123

TRW-26937-6043-RU-00  
Department of Defense Space

SPA-TRW



UNCLASSIFIED

Transportation System Mission  
Operations Systems Definition  
Mission Assessment Report:  
Operations Design Mission A.  
(SAMSO-TR-75-261)  
AD-A018 215

\* \* \*  
TRW-26937-6050-RU-00  
DOD/SIS Mission Operations  
Systems Definition Mission  
Assessment Report: Operations  
Design Mission B.  
(SAMSO-TR-75-262)  
AD-A019 274

\*UNG (MAN T) EL SEGUNDO CALIF  
\* \* \*  
Space Shuttle Digital Computer  
Simulation Benchmark.  
(AFFTC-TR-78-30)  
AD-A065 480

\*VIRGINIA POLYTECHNIC INST AND STATE  
UNIV BLACKSBURG DEPT OF AEROSPACE  
AND OCEAN ENGINEERING  
\* \* \*

VPI-AERO-044  
Space Shuttle Windward  
Streamline Laminar Viscous Shock-  
Layer Flows at Angle of Attack--  
Comparison of Theory and  
Experiment.  
AD-A042 843

\*YALE UNIV NEW HAVEN CONN DEPT OF  
ENGINEERING AND APPLIED SCIENCE  
\* \* \*

Nonequilibrium Stagnation  
Region Aerodynamic Heating of  
Hypersonic Glide Vehicles,  
(AFOSR-TR-76-0965)  
AD-A030 389

CORP AUTHOR-MONITOR AGENCY-21  
UNCLASSIFIED ZOM07

UNG-YAL

# UNCLASSIFIED

## SUBJECT INDEX

- \*ABLATION
      - SILICONE PLASTICS
      - Physical Properties of Vacuum Oiled DC-325 Ablative Material.\*
      - AD- 856 671
    - \*ACOUSTICS
      - Space Shuttle Response to Acoustic Combustion Instability in the solid Rocket Boosters.\*
      - AD-A037 157
    - \*ADAPTERS
      - BOLTS
      - Torque Versus Preload. Gemini B RV/Adapter Tie Strap.\*
      - AD- 856 368
    - ENVIRONMENTAL TESTS
      - Static Test of the Gemini B adapter for the Critical Combination of Ascent Phase Loads and Elevated Temperature.\*
      - AD- 856 653
    - SEPARATION
      - Test Plan Gemini B Adapter Separation Test - Abort Mode.\*
      - AD- 856 756
    - \*AERIAL PHOTOGRAPHS
      - SkyLab Imagery: Application Reservoir Management in New England.\*
      - AD-A030 329
    - \*AERODYNAMIC CHARACTERISTICS
      - Effects of Vertical Tail Flexibility on the Aerodynamic Characteristics of a 0.03-Scale NASA Space Shuttle Orbiter at Mach Numbers from 0.90 to 1.55.\*
      - AD-A062 377
      - Data Verification Tests of a 0.03-Scale NASA Space Shuttle Launch Vehicle at Mach Numbers from 0.60 to 1.55.\*
      - AD-A070 442
    - RENDEZVOUS SPACECRAFT
      - Reprint: Aerodynamic
  - Characteristics of Two-Dimensional Waverider Configurations.
    - AD- 765 285
  - \*AERODYNAMIC HEATING
    - Heat-Transfer Tests of Two Space Shuttle Orbiter Configurations at Mach Number 8.\*
    - AD- 772 687
    - Heat-Transfer Tests on the Rockwell International Space Shuttle Orbiter with and without Simulated protuberances.\*
    - AD-A012 876
    - Pressure and Heat Transfer Tests on the NASA Space Shuttle External Tank at Mach Number 16.\*
    - AD-A015 743
    - Reprint: Nonequilibrium Stagnation Region Aerodynamic Heating of Hypersonic Glide Vehicles.
    - AD-A030 389
    - Simulated Thermal Protection Tile Roughness Effects on Windward Surface Heat Transfer on the Rockwell International Space Shuttle Orbiter.\*
    - AD-A034 733
    - Test Results from the NASA/Rockwell International Space Shuttle Integrated Vehicle Test (IH 85) Conducted in the AEDC-VKF Tunnel A.\*
    - AD-A050 141
    - Infrared and Phase-Change Paint Measurements of Heat-Transfer on the Space Shuttle Orbiter.\*
    - AD-A059 796
    - Aerothermal Evaluation of the Space Shuttle Solid Rocket Booster and Solid Rocket Motor Thermal Protection System.\*
    - AD-A070 444
  - HYPERSONIC CHARACTERISTICS
    - Recent Notes and Data on Interference Heating.\*
    - AD- 747 765
- Heat-Transfer and Flow-Field Tests of the North American Rockwell/General Dynamics Convair Space Shuttle Configurations.\*
  - AD- 755 354
  - Heat-Transfer Investigation of Langley Research Center Delta Wing Configurations at Mach Numbers 8 and 10.5.\*
  - AD- 755 355
- RENDEZVOUS SPACECRAFT
  - Heat-Transfer and Flow-Field Tests of the McDonnell Douglas-Martin Marietta Space Shuttle Configurations.\*
  - AD- 759 176
- \*AERODYNAMIC STABILITY
  - NASA/RI OA 208 and 209 Verification Static-Stability and Control-Effectiveness Tests of the Space Shuttle Orbiter Vehicle at Mach Numbers from 2 to 8.\*
  - AD-A057 080
- \*AERODYNAMICS
  - WIND TUNNELS
  - Reprint: On Dynamic Stability Testing of Unconventional Configurations.
  - AD- 721 971
- \*AEROSPACE CRAFT
  - Dynamic Stability Testing of Aircraft - Needs Versus Capabilities.\*
  - AD- 773 160
- OPTIMIZATION
  - Finite Element Modeling and Optimization of Aerospace Structures.\*
  - AD- 754 315
- \*AEROSPACE MEDICINE
  - Recent Advances in Aeronautical and Space Medicine.\*
  - AD-A078 360
- CENTRIFUGES

# LIFTING REENTRY VEHICLES

SUBJECT INDEX-1  
UNCLASSIFIED ZOM07

# UNCLASSIFIED

Biomedical potential of a centrifuge in an orbiting laboratory.  
AD- 472 550

DECOMPRESSION SICKNESS  
Reprint: Dissolved nitrogen and bends in oxygen-nitrogen mixtures during exercise at decreased pressures.  
AD- 620 625

\*AEROSPACE SYSTEMS  
AGARD Highlights.\*  
AD-A050 761

CHECKOUT PROCEDURES  
Gemini B - Ejection Seat System Test - Dual Ejection Test Plan.\*  
AD- 856 755

INSTRUCTION MANUALS  
Operation and Service Manual for Ejection Seat Functional Test Fixture 52E040089.\*  
AD- 856 768

PERFORMANCE (HUMAN)  
Analysis of Crew Escape Initiation Response Characteristics Form Titan IIIM/Gemini B State 'D' Abort Simulation.\*  
AD- 856 902

RELIABILITY  
Gemini B Oxygen Safety Study. Volume V. Cabin Egress.\*  
AD- 856 814

\*AIR Interruption of Denitrogenation by Air-Breathing.\*  
AD-A020 049

\*AIR CONDITIONING EQUIPMENT DESIGN  
Critical Design Review Package for Environmental Control Unit CEI No. MOL-109A.\*  
AD- 856 831

LEAK DETECTORS  
Operation and Service Manual for ECS Coolant System Leak Rate Tester 52E180150.\*  
AD- 856 782

MONITORS  
CDRL Validation Test Plan for Environmental Monitor Unit. Sequence Number T016. Data Item Number UT454.\*  
AD- 857 012  
CDRL Acceptance Test Plan for Environmental Monitor Unit. Sequence Number T056. Data Item Number UT455.\*  
AD- 857 014

\*AIR FORCE FACILITIES  
Impact of Space Shuttle Support Facilities Construction on Special Interest Plant Species (Vandenberg AFB, CA).  
AD-A049 177

\*AIR POLLUTION  
Annual Report of the Lawrence Livermore Laboratory to the FAA on the High Altitude Pollution Program-1978.\*  
AD-A069 127

\*AIRCRAFT EXHAUST  
Annual Report of the Lawrence Livermore Laboratory to the FAA on the High Altitude Pollution Program-1978.\*  
AD-A069 127

\*AIRCRAFT PROTUBERANCES  
CYLINDRICAL BODIES  
Flutter Test of a 0.50-Scale MOL Meteoroid Shield Panel at Mach Numbers from 1.2 to 2.5.\*  
AD- 848 174

\*AIRCRAFT SEATS  
POSITIONING DEVICES(MACHINERY)  
G Protective Tilting Aircraft Seats.\*  
AD- 741 202

\*AIRFOILS  
TURBULENT BOUNDARY LAYER  
Numerical Calculation of the Subsonic and Transonic Turbulent Boundary Layer on an Infinite Yawed Airfoil.\*  
AD- 763 730

\*AIRFRAMES  
TURBULENT BOUNDARY LAYER  
MOL Rigid Body Fluctuating Pressure Test (IAL2). Sequence Number B333. Data Item UT-135.\*  
AD- 856 513  
MOL Rigid Body Fluctuating Pressure Test (IAL2). Volume II. Sequence Number B329. Data Item Number UT-134.\*  
AD- 856 554

\*ALGORITHMS  
Optimal Three Burn Orbit Transfer.\*  
AD-A039 257

\*ALUMINUM  
POWDER METALLURGY  
FOREIGN SCIENCE BULLETIN, VOLUME 5, NUMBER 4, APRIL 1969.\*  
AD- 687 326

\*ASTRONAUTICS  
RENDEZVOUS GUIDANCE  
Theoretical method for precision rendezvous spacecraft station-keeping.  
AD- 612 048

REVIEWS  
Data on the Elektron space system Kosmos-23 through 29, the Zond-1, and the Polat-2.  
AD- 459 966

SPACE STATIONS  
Transient dynamic response of orbiting space stations.  
AD- 613 081

USSR  
Translation of East German

SUBJECT INDEX-2  
UNCLASSIFIED ZOMQ7

AER-AST

# UNCLASSIFIED

articles: Soviet space exploration as viewed by East German specialists.  
AD- 624 575

\*ASTRONOMICAL GEODESICS  
SATELLITES (ARTIFICIAL)  
Overall distance scale of the earth: Determination by using high-altitude satellites.  
AD- 622 479

\*ASTROPHYSICS  
SCIENTIFIC RESEARCH  
Translation of Russian articles on cosmic research.  
AD- 603 012

\*ATMOSPHERE ENTRY  
Real Gas Scale Effects on Hypersonic Laminar Boundary-Layer Parameters Including Effects of Entropy-Layer Swallowing.\*  
AD-A018 755

COMPUTER PROGRAMMING  
Program Description for Digital Six-Degree-of-Freedom Reentry Simulation. Gemini B.\*  
AD- 857 030

\*MANNED SPACECRAFT  
Reprint: Aerodynamic Characteristics of Two-Dimensional Waverider Configurations.  
AD- 765 285

RENDEZVOUS SPACECRAFT  
Environmental Testing of Closed Pore Insulation (CPI) I - ARC Jet Testing.\*  
AD- 756 204

\*ATTITUDE CONTROL SYSTEMS  
A Mathematical Model for the Longitudinal Control System of the Space Shuttle Orbiter.\*  
AD-A041 158

CHECKOUT EQUIPMENT  
Operation and Service Manual for

Hand Controller Tester Kit 52E270049.\*  
AD- 856 795  
Operation and Service Manual for Attitude Indicator EFC Console 52E270035.\*  
AD- 857 154

INSTRUCTION MANUALS  
Operation and Service Manual for Attitude Control System Electronics EFC Console 52E270002.\*  
AD- 856 790

MANNED SPACECRAFT  
Guidance and Control Mechanics Test - Attitude Control System Analytical Performance Verification.\*  
AD- 856 672  
Effects and Control of Contamination From a Scaled mul transational Thruster in a Longitudinal Orientation.\*  
AD- 861 021

RENDEZVOUS SPACECRAFT  
NASA-Convaair ACS Space Shuttle Study at Mach Number 8.0.\*  
AD- 759 578

\*BATTERY CHARGERS  
INSTRUCTION MANUALS  
Operation and Service Manual for ACPU EFC Charger/Tester 52E270071.\*  
AD- 857 173  
Operation and Service Manual for Spacecraft Battery Charger 52E230075.\*  
AD- 857 176

\*BOLTS  
ADAPTERS  
Torque Versus Preload. Gemini B RV/Adapter Tie Strap.\*  
AD- 856 668

\*BOOSTER ROCKET ENGINES  
Solid Rocket Booster Dewatering System.\*  
AD-A028 742

Space Shuttle Response to Acoustic Combustion Instability in the solid Rocket Boosters.\*  
AD-A037 157

A Remote. Unmanned Dewatering System for Recovery of the Solid Rocket Booster of the Space Shuttle Program.\*  
AD-A063 077

Data Verification Tests of a 0.02-Scale NASA Space Shuttle Launch Vehicle at Mach Numbers from 0.60 to 1.55.\*  
AD-A069 194

Aerothermal Evaluation of the Space Shuttle Solid Rocket Booster and Solid Rocket Motor Thermal Protection System.\*  
AD-A070 444

\*BOOSTER ROCKETS  
Reprint. Example of Dynamic Interference Effects between Two Oscillating Vehicles.  
AD- 772 888

\*BOUNDARY LAYER TRANSITION  
Roughness and Wall Temperature Effects on Boundary-Layer Transition on a 0.0175-Scale Space Shuttle Orbiter Model Tested at Mach Number 8.\*  
AD-A038 895

\*BUS CONDUCTORS  
Proceedings of the Multiplex Data Bus Conference Held at Baltimore Towers Hotel, Dayton, Ohio on 3-5 November 1976.\*  
AD-A033 793

\*CELESTIAL MECHANICS  
SPACE STATIONS  
Transient dynamic response of orbiting space stations.  
AD- 613 081

\*CENTRIFUGES  
AEROSPACE MEDICINE  
Biomedical potential of a centrifuge in an orbiting

SUBJECT INDEX-3  
UNCLASSIFIED ZOM07

AST-CEN

# UNCLASSIFIED

laboratory. AD- 472 550	C and S Beacon EFC Test Bench 52E190003.* AD- 856 801	*CLOSED ECOLOGICAL SYSTEMS INSTRUCTION MANUALS Operation and Service Manual for Spacecraft ECS Test Console 52E180076.* AD- 856 781
*CHECKOUT EQUIPMENT CONTROL PANELS Operation and Service Manual for Gemini B/Laboratory Electrical Interface Substitute 58E040503.* AD- 856 773	THERMOSTATS RCS Propellant Tank Thermostat Test.* AD- 856 896	*COMBUSTION CHAMBERS DESIGN Program Titan IIIM Standard Space Launch Vehicle Component Development Report for the Titan IIIM Stage 1 Combustion Chamber.* AD- 860 050
Operation and Service Manual for Spacecraft Command System Checkout and Monitor 58E190513.* AD- 856 777	TIMING DEVICES Operation and Service Manual for Sequence Control and Monitor Console 52E230012 and Electronic Timer Control Panel 52E270048.* AD- 856 787	SPACE PROPULSION Orbit-to-Orbit Shuttle Engine Design Study. Book 1. Parametric Cycle Study.* AD- 900 190
Operation and Service Manual for Spacecraft Instrumentation System Test Set 52E440040.* AD- 856 906	*CHECKOUT PROCEDURES COMPUTER PROGRAMMING MOL Item Test Plan (Computer Programs). Computer Program, Operational, All Systems Test Equipment Group. Sequence Number B295. Data Item Number UT-109.* AD- 856 509	*COMBUSTION PRODUCTS Studies of the Exhaust Products from Solid Propellant Rocket Motors.* AD-A029 569
INSTRUCTION MANUALS Operation and Service Manual for Spacecraft Battery Load Bank 52E230073.* AD- 856 789	INSTRUCTION MANUALS Operation and Service Manual for Sequential System Control and Monitor 52E230004.* AD- 857 144	CONTAMINATION Effects and Control of Contamination from a Scaled MOL translational Thruster in a Longitudinal Orientation.* AD- 861 021
Operation and Service Manual for Air Data System Tester 52E360013.* AD- 856 796	OPERATIONAL READINESS MOL Ground Test Plan, Acceptance Test Plan. Volume I. Ave Components through Subsystems and Age CEI's Sequence Number B287. Data Item Number UT-101.* AD- 856 841	*COMPILERS TEST METHODS MOL Item Test Plan (Computer Programs). Computer Program. Compiler, Manned Orbiting Laboratory, Test Oriented Language. Sequence Number B294.* AD- 856 511
ECS EFC High Pressure Bench 52E180011.* AD- 857 139	*CHEMICAL ENGINEERING SPACE STATIONS Reprint: Industrial Chemistry in Space. AD- 720 136	*COMPRESSIBLE FLOW MATHEMATICAL MODELS Numerical Calculation of the Subsonic and Transonic Turbulent Boundary Layer on an Infinite Yawed Airfoil.* AD- 763 730
Operation and Service Manual for DC-DC Converter EFC Console 52E440008.* AD- 857 142	*CIRCUIT BREAKERS PERFORMANCE(ENGINEERING) Small Gauge Wire Overload Protection Evaluation.* AD- 856 529	
Operation and Service Manual for Spacecraft Battery Balancing Unit 52E230131.* AD- 857 146		
Operation and Service Manual for Accelerometer Static Test Unit 52E440039.* AD- 857 151		
LAUNCH VEHICLES Operation and Service Manual for Gemini B/MOL/L/V Electrical Interface Substitute 58E040504.* AD- 856 774		
MANNED SPACECRAFT Operation and Service Manual for		

SUBJECT INDEX-4  
UNCLASSIFIED ZOM07

CHE-COM

# UNCLASSIFIED

- \*COMPUTER PROGRAMMING  
Department of Defense Space Shuttle on-Board Software Requirements.\*  
AD- 785 123
- CHECKOUT PROCEDURES  
MOL Item Test Plan (Computer Programs). Computer Program, Operational, All Systems Test Equipment Group. Sequence Number 8295. Data Item Number UT-109.\*  
AD- 856 509
- Gemini B Procedures Simulator Initial Version Precision Qualification Test Procedure CEI 58Y010A GBPS Computer Program.\*  
AD- 856 847
- SIMULATION  
Item Test Plan (Computer Program) Gemini B Procedures Simulator. Sequence Number 29T. Data Item U-T-216.\*  
AD- 856 898
- \*COMPUTERIZED SIMULATION  
Space Shuttle Digital Computer Simulation Benchmark.\*  
AD-A065 480
- \*COMPUTERS  
TEST EQUIPMENT  
Operation and Service Manual for Computer System Test Console 52E270003. Volume I.\*  
AD- 856 791
- \*CONSTRUCTION  
Space Transportation System Western Launch Site Construction Management Information System - A Case Study.\*  
AD-A077 675
- \*CONTROL PANELS  
TELEMETRY SYSTEMS  
Operation and Service Manual for Telemetry Control and Checkout Console 52E440063.\*  
AD- 856 810
- \*CONTROLLABLE-THRUST ROCKET MOTORS  
DESIGN  
Air Force Reusable Rocket Engine Program XLR129-P-1. Volume I.\*  
AD- 881 744
- O2/H2 Advanced Maneuvering Propulsion Technology Program Engine System Studies. Volume I. Aerospace Engine Configuration Design and Analysis.\*  
AD- 890 753
- O2/H2 Advanced Maneuvering Propulsion Technology Program Engine System Studies. Volume II. 25,000 Pound Thrust Bell Engine Configuration Design and Analysis.\*  
AD- 894 424
- SPACE STATIONS  
Effects and Control of Contamination From a Scaled MOL Translational Thruster in a Longitudinal Orientation.\*  
AD- 861 021
- \*COOLANT PUMPS  
ELECTRIC MOTORS  
Coolant Pump Power Inverter - Motor Running Characteristics.\*  
AD- 856 878
- ENVIRONMENTAL TESTS  
Coolant Pump Assembly, Low Temperature Start Test.\*  
AD- 856 670
- SPECIFICATIONS  
Functional Tests on Two Gemini B Coolant Pump Assemblies.\*  
AD- 856 574
- Functional Tests on Two Coolant Pump Assemblies.\*  
AD- 856 879
- \*COOLING  
CHECKOUT EQUIPMENT  
Operation and Service Manual for ECS EFC Coolant Bench 52E80013.\*  
AD- 857 143
- \*DAMAGE ASSESSMENT
- \*COMPUTER PROGRAMMING  
Department of Defense Space Shuttle on-Board Software Requirements.\*  
AD- 785 123
- CHECKOUT PROCEDURES  
MOL Item Test Plan (Computer Programs). Computer Program, Operational, All Systems Test Equipment Group. Sequence Number 8295. Data Item Number UT-109.\*  
AD- 856 509
- Gemini B Procedures Simulator Initial Version Precision Qualification Test Procedure CEI 58Y010A GBPS Computer Program.\*  
AD- 856 847
- SIMULATION  
Item Test Plan (Computer Program) Gemini B Procedures Simulator. Sequence Number 29T. Data Item U-T-216.\*  
AD- 856 898
- \*COMPUTERIZED SIMULATION  
Space Shuttle Digital Computer Simulation Benchmark.\*  
AD-A065 480
- \*COMPUTERS  
TEST EQUIPMENT  
Operation and Service Manual for Computer System Test Console 52E270003. Volume I.\*  
AD- 856 791
- \*CONSTRUCTION  
Space Transportation System Western Launch Site Construction Management Information System - A Case Study.\*  
AD-A077 675
- \*CONTROL PANELS  
TELEMETRY SYSTEMS  
Operation and Service Manual for Telemetry Control and Checkout Console 52E440063.\*  
AD- 856 810
- \*CONTROLLABLE-THRUST ROCKET MOTORS  
DESIGN  
Air Force Reusable Rocket Engine Program XLR129-P-1. Volume I.\*  
AD- 881 744
- O2/H2 Advanced Maneuvering Propulsion Technology Program Engine System Studies. Volume I. Aerospace Engine Configuration Design and Analysis.\*  
AD- 890 753
- O2/H2 Advanced Maneuvering Propulsion Technology Program Engine System Studies. Volume II. 25,000 Pound Thrust Bell Engine Configuration Design and Analysis.\*  
AD- 894 424
- SPACE STATIONS  
Effects and Control of Contamination From a Scaled MOL Translational Thruster in a Longitudinal Orientation.\*  
AD- 861 021
- \*COOLANT PUMPS  
ELECTRIC MOTORS  
Coolant Pump Power Inverter - Motor Running Characteristics.\*  
AD- 856 878
- ENVIRONMENTAL TESTS  
Coolant Pump Assembly, Low Temperature Start Test.\*  
AD- 856 670
- SPECIFICATIONS  
Functional Tests on Two Gemini B Coolant Pump Assemblies.\*  
AD- 856 574
- Functional Tests on Two Coolant Pump Assemblies.\*  
AD- 856 879
- \*COOLING  
CHECKOUT EQUIPMENT  
Operation and Service Manual for ECS EFC Coolant Bench 52E80013.\*  
AD- 857 143
- \*DAMAGE ASSESSMENT
- EXHAUST GASES  
On the Simulation of Plumes from High Pressure Hydrogen/Oxygen Rocket Engines.\*  
AD- 733 896
- \*DATA PROCESSING  
Department of Defense Space Shuttle on-Board Software Requirements.\*  
AD- 785 123
- Department of Defense Space Transportation System Orbiter Avionics Software Integration Study. Analysis of Orbiter Systems to Meet MASE Requirements.\*  
AD-A070 634
- \*DECOMPRESSION SICKNESS  
Interruption of Denitrogenation by Air-Breathing.\*  
AD-A020 049
- AEROSPACE MEDICINE  
Reprint: Dissolved nitrogen and bends in oxygen-nitrogen mixtures during exercise at decreased pressures.  
AD- 620 625
- \*DELTA WINGS  
RENDEZVOUS SPACECRAFT  
Heat-Transfer Investigation of Langley Research Center Delta Wing Configurations at Mach Numbers 8 and 10.5.\*  
AD- 755 355
- \*DESCENT TRAJECTORIES  
SPECIFICATIONS  
Preliminary Handling Qualities Requirements for Lifting Re-Entry Vehicles during Terminal Flight.\*  
AD- 731 563
- \*DETECTORS  
TEMPERATURE  
Operation and Service Manual for Standard Temperature Monitor System 52E440044 and Harness Assembly 52E440033.\*

SUBJECT INDEX-5  
UNCLASSIFIED ZOMQ7

COM-DET

# UNCLASSIFIED

- AD- 857 168
- DISCONNECT FITTINGS  
UMBILICAL CORDS(AEROSPACE)  
Structural and Functional Test  
of the Gemini B Adapter Ground  
Coolant Supply Umbilical  
Disconnect.\*  
AD- 856 570
- ECOLOGY  
Impact of Space Shuttle Support  
Facilities Construction on Special  
Interest Plant Species (Vandenberg  
AFB, CA).\*
- AD-A049 177
- ECONOMIC ANALYSIS  
Space Shuttle: A Case Study in  
Economic Analysis.\*  
AD-A033 871
- EJECTION SEATS  
DROP TESTS  
Gemini B Ejection Seat  
Functional Test Air Drop Test  
Plan.\*  
AD- 856 746
- ELASTIC PROPERTIES  
EXPERIMENTAL DATA  
Reprint: Experimental  
investigation of the effects of  
elasticity on the stability of  
manned rotating space stations.  
AD- 638 705
- ELECTRIC CABLES  
MOISTUREPROOFING  
Immersion Testing of Teflon  
Bundles.\*  
AD- 856 545
- RELIABILITY(ELECTRONICS)  
Evaluation of Wire  
Characteristics for use on Gemini  
B.\*  
AD- 856 877
- Operation and Service Manual for  
Umbilical Cable Tester 52E200004.\*  
AD- 857 159
- SPECIFICATIONS  
Wiring Harness Specification.\*  
AD- 856 693
- ELECTRIC INSULATION  
FLAMMABILITY  
Massive Overloads on Teflon,  
Kapton, and Kynar Insulated Wire in  
an Oxygen Atmosphere.\*  
AD- 856 654
- ELECTRIC MOTORS  
COOLANT PUMPS  
Torque vs Motor Input Current  
for Coolant Pump Motor, P/N 52-  
83700-403, S/N 123-111.\*  
AD- 856 652
- Coolant Pump Power Inverter -  
Breadboard Evaluation Testing.\*  
AD- 856 665
- Coolant Pump Power Inverter -  
Motor Running Characteristics.\*  
AD- 856 878
- ELECTRIC POWER PRODUCTION  
SPACE STATIONS  
Electrical power systems for the  
manned orbiting laboratory.  
AD- 624 668
- ELECTRIC PROPULSION  
FEASIBILITY STUDIES  
Scientific results from the  
flight of Yantar automatic  
ionospheric laboratories. Part II--  
Translation.  
AD- 704 045
- FLIGHT TESTING  
Advanced systems testing on a  
manned orbital space station.  
AD- 601 899
- ELECTRIC RELAYS  
RELIABILITY(ELECTRONICS)  
Operation and Service Manual for  
Relay Panel EFC Console 52E230010.\*  
AD- 857 170
- TEST EQUIPMENT  
Operation and Service Manual for
- Control Relay EFC Tester  
52E230014.\*  
AD- 857 175
- ELECTRIC SWITCHES  
RELIABILITY(ELECTRONICS)  
EMI Test of Gemini B Limit  
Switches.\*  
AD- 856 569
- Gemini B Limit Switches.  
Spacecraft Pressure Effects.\*  
AD- 856 657
- ELECTRIC WIRE  
ELECTRICAL PROPERTIES  
Current Rating of 24 Gauge High  
Strength Alloy Wire.\*  
AD- 856 533
- FAILURE(ELECTRONICS)  
Small Gauge Wire Overload  
Protection, evaluation.\*  
AD- 856 529
- Massive Overload of Kynar (5M974  
and 5M975) Insulated Wire in Air.\*  
AD- 856 655
- ELECTRONIC EQUIPMENT  
TEST METHODS  
Gemini B Electronic Systems Test  
Unit (ESTU) Test Plan.\*  
AD- 856 752
- ELECTROPHYSIOLOGY  
REVIEWS  
FOREIGN SCIENCE BULLETIN, VOLUME  
5, NUMBER 4, APRIL 1969.\*  
AD- 687 326
- ENVIRONMENTAL IMPACT STATEMENTS  
Impact of Space Shuttle Support  
Facilities Construction on Special  
Interest Plant Species (Vandenberg  
AFB, CA).\*
- AD-A049 177
- Environmental Impact Analysis  
Process. Environmental Impact  
Statement Space Shuttle Program  
Vandenberg AFB, California.\*  
AD-A060 462

SUBJECT INDEX-6  
UNCLASSIFIED ZOM07

DIS-ENV

# UNCLASSIFIED

\*ENVIRONMENTS  
Environmental Impact Analysis  
Process. Environmental Impact  
Statement Space Shuttle Program  
Vandenberg AFB, California.\*  
AD-A060 462

\*EXHAUST FLAMES  
EROSION  
Subscale Rocket Impingement -  
Blast Shield and Laboratory Tunnel  
Specimen.\*  
AD- 856 881

\*EXHAUST GASES  
Studies of the Exhaust Products  
from Solid Propellant Rocket  
Motors.\*  
AD-A029 569

DAMAGE ASSESSMENT  
On the Simulation of Plumes from  
High Pressure Hydrogen/Oxygen  
Rocket Engines.\*  
AD- 733 896

\*EXPANDABLE STRUCTURES  
DESIGN  
Applications Study of Expandable  
Space Structures.\*  
AD- 879 707

SANDWICH CONSTRUCTION  
SELF-RIGIDIZING EXPANDABLE-  
SANDWICH AEROSPACE SHELTERS AND  
SOLAR COLLECTORS.\*  
AD- 656 747

SPACE STATIONS  
PRE-PHASE I FOR DESIGN,  
FABRICATION, AND ORBITAL TESTING OF  
A SPACE STRUCTURE.\*  
AD- 815 716

\*EXPLOSIVE ACTUATORS  
ENERGY  
Performance Comparison of Gemini  
B 2191 MDF Explosive (DIPAM) to  
NASA Gemini 2191 MDF Explosive  
(RDX).\*

AD- 856 540

HATCHES  
Dissection of Hatch Actuator  
Breech Cartridge, P/N A218-10 (15-  
1006).\*

AD- 856 651

STAGING  
FLSC Cutter Assembly/Dual  
Titanium Straps Gap Test.\*  
AD- 856 883

TEST EQUIPMENT  
Operation and Service Manual for  
Hatch Actuator Test Fixture  
52E040094.\*  
AD- 856 769

\*EXPLOSIVES INITIATORS  
MODELS(SIMULATIONS)  
Operation and Service Manual for  
Squib Simulator 52E400005.\*  
AD- 857 169

TEST EQUIPMENT  
Operation and Service Manual for  
Portable Pyrotechnic Tester  
52E400004.\*  
AD- 857 172

\*EXTENDABLE STRUCTURES  
AERODYNAMIC HEATING  
MOL Preliminary Data Report of  
the MOL Protuberance Heat Transfer  
Test (IAL1). Volume I. Data Item  
Number UT-132.\*  
AD- 857 160

HEAT TRANSFER  
MOL Fluid Dynamics Test Pretest  
Report. MOL Protuberance Heating  
Wind Tunnel Model. Sequence Number  
8334. Data Item Number UT-135.\*  
AD- 856 515

\*EXTERNAL STORES  
Aerothermal Tests of the Space  
Shuttle External Tank Insulating  
Material.\*  
AD-A017 497

Space Shuttle External Tank  
Instrumentation Evaluation.\*

AD-A070 443

\*EXTRATERRESTRIAL BASES  
LOGISTICS  
Mathematical model of supply  
support for space operations.  
AD- 615 165

\*EXTRAVEHICULAR ACTIVITY  
Astronaut Manual EVA Guidance:  
An Operational Procedure.\*  
AD-A026 267

MANNED SPACECRAFT  
Extravehicular Crew Transfer  
Test Report July 1968.\*  
AD- 856 875

Extravehicular Crew Transfer  
Test Report.\*  
AD- 856 903

SYMPOGIA  
NATIONAL CONFERENCE ON SPACE  
MAINTENANCE AND EXTRAVEHICULAR  
ACTIVITIES (2ND). 6-8 AUGUST 1968.  
LAS VEGAS, NEVADA.\*  
AD- 688 246

\*FAIRINGS  
HEAT TRANSFER  
Re-Entry Module/Adapter  
Interconnect Fairing Aerodynamic  
Heating Wind Tunnel Tests AEDC  
tunnel B.\*  
AD- 856 658

\*FIRE SAFETY  
CHECKOUT PROCEDURES  
Gemini B Oxygen Safety Study.  
Volume VI. Procedures - Ground  
Testing and Flight.\*  
AD- 856 662

OXYGEN  
Gemini B Oxygen Safety Study.  
Volume I. Summary and  
Recommendations.\*  
AD- 856 739

REVIEWS  
MOL Fire Safety Activities

SUBJECT INDEX-7  
UNCLASSIFIED ZOM07

ENV-FIR



# UNCLASSIFIED

(Briefing).\*

AD- 856 524  
MOL Safety Evaluation Based on Apollo 204 Review Board Findings and Recommendations, and Brooks Air Force Base Accident Investigation Board Conclusions.\*

AD- 856 687

\*FLASHES  
Reprint: Particle Induced Visual Phenomena in Space.  
AD-A053 213  
Reprint: Role of Nuclear Stars in the Light Flashes Observed on Skylab 4.  
AD-A053 214

\*FLIGHT SIMULATORS  
MANNED SPACECRAFT  
Gemini B Procedures Simulator Initial Version Precision Qualification Test Procedure CEI 58Y010A GBPS Computer Program.\*  
AD- 856 847

\*FLIGHT TESTING  
Space Shuttle Digital Computer Simulation Benchmark.\*  
AD-A065 480

\*FLUORINE HANDLING  
Orbit-to-Orbit Shuttle Propellant Integration and Handling Study.\*  
AD- 735 290

\*FLUTTER SHIELDING  
MOL Fluid Dynamics Test Pretest Report: Test Line Item 1A35. MOL flutter Test. LM Meteoroid Shield Half-Scale Model. Sequence Number B332. Data Item Number UT-135.\*  
AD- 856 548

\*FUEL CONSUMPTION OPTIMIZATION  
OPTIMUM FEEDBACK CONTROL OF A SYNODIC SATELLITE.\*

AD- 695 043

\*FUEL TANKS  
Pressure and Heat Transfer Tests on the NASA Space Shuttle External Tank at Mach Number 16.\*  
AD-A015 743  
Aerothermal Tests of the Space Shuttle External Tank Insulating Material.\*  
AD-A017 497

\*GASEOUS ROCKET PROPELLANTS  
RENDEZVOUS SPACECRAFT  
C. the Simulation of Plumes from High Pressure Hydrogen/Oxygen Rocket Engines.\*  
AD- 733 896

\*GLOBAL POSITIONING SYSTEM  
A Kalman Filter Design for the Space Shuttle Orbiter Inertial Measuring Unit During Descent/Reentry Using Global Positioning System Satellite Information.\*  
AD-A055 465

\*GROUND SUPPORT EQUIPMENT INSTRUCTION MANUALS  
Operation and Service Manual for Coolant Fluid Transfer Kit 52E180184.\*  
AD- 856 770  
Operation and Service Manual for 6000 PSIG Oxygen Supply Cart 58E181231.\*  
AD- 856 776  
Operation and Service Manual for Spacecraft Leakage Tester 52E180027.\*  
AD- 856 778  
Operation and Service Manual for Spacecraft Ground Cooling Auxiliary Refrigeration Unit 52E180172.\*  
AD- 856 783  
Operation and Service Manual for Dual Gas Flow Control Panel 58E181228.\*  
AD- 856 784

LEAK DETECTORS  
Operation and Service Manual for Helium Leak Detector Cabinet 52E420097.\*  
AD- 856 804

MONITORS  
Operation and Service Manual for Spacecraft Sequence Recorder 52E230003.\*  
AD- 856 802

POWER SUPPLIES  
Operation and Service Manual for Blockhouse Power Backup Battery Rack 52E230049 and External Power Control and Monitor Backup Battery Rack 52E230058.\*  
AD- 856 788

\*GUIDANCE  
Proceedings of the Biennial Guidance Test Symposium (9th) Held at Holloman Air Force Base, New Mexico on 10-12 October 1979. Volume I.\*  
AD-A076 567

\*HATCHES  
EXPLOSIVE ACTUATORS  
Dissection of Hatch Actuator Breech Cartridge. P/N A218-10 (15-1006).\*

AD- 856 651

PERFORMANCE(ENGINEERING)  
Heat Shield Hitch Mechanism - Simulated Altitude and Temperature Functional Test.\*  
AD- 856 885  
Heat Shield Hitch Acceptance Test for Functional Fit at Temperature.\*  
AD- 856 886

SANDWICH CONSTRUCTION  
Gemini B Large Pressure Bulkhead Hatch Element Strength Verification Test.\*  
AD- 856 538

SUBJECT INDEX-8  
UNCLASSIFIED ZOM07

FLA-HAT

# UNCLASSIFIED

\*HEAT EXCHANGERS  
FLUID FLOW  
Gemini B Interface Heat  
Exchanger Flow Distribution Test.\*  
AD- 856 890

HEAT TRANSFER  
Interface Heat Exchanger  
Interstitial Material Element Test.  
Heat Transfer.\*  
AD- 856 667

HEAT TRANSFER COEFFICIENTS  
Interface Heat Exchanger Heat  
Transfer Element Test.\*  
AD- 856 892

MANNED SPACECRAFT  
Interface Heat Exchanger System  
Test.\*  
AD- 856 674

WETTING  
Condensate Wetting of Suit Heat  
Exchanger Water Separator Plates.\*  
AD- 856 891

\*HEAT SHIELDS  
Aerothermal Tests of the Space  
Shuttle External Tank Insulating  
Material.\*  
AD-A017 497

FASTENINGS  
Heat Shield Hatch Acceptance  
Test for Functional Fit at  
Temperature.\*  
AD- 856 656

RAIN  
Rain Erosion Characteristics of  
Thermal Protection System Materials  
at Subsonic Velocities.\*  
AD- 750 793

RENDEZVOUS SPACECRAFT  
Rain Erosion Characteristics of  
Thermal Protection System Materials  
at Subsonic Velocities.\*  
AD- 750 793

SPDUMENE  
Development of Beta-Spodumene  
Closed Pore Insulation (CPI).\*

AD- 729 882

THERMAL ANALYSIS  
Environmental Testing of Closed  
Pore Insulation (CPI) I - ARC Jet  
Testing.\*  
AD- 756 204

WATER IMPINGEMENT  
Environmental Testing of Closed  
Pore Insulation (CPI), III - Rain  
Erosion Testing.\*  
AD- 765 392

\*HEAT TRANSFER  
Heat-Transfer Tests of a 0.0175-  
Scale Model of the Space Shuttle at  
Mach Numbers 2.5, 3.5, 4.5, and  
5.5.\*  
AD-A025 080

Roughness and Wall Temperature  
Effects on Boundary-Layer  
Transition on a 0.0175-Scale Space  
Shuttle Orbiter Model Tested at  
Mach Number 8.\*  
AD-A038 895

Heat-Transfer Tests on the Nose  
of the Shuttle Orbiter External  
Tank (PH-15).\*

AD-A058 693

Infrared and Phase-Change Paint  
Measurements of Heat-Transfer on  
the Space Shuttle Orbiter.\*  
AD-A059 796

\*HUMAN FACTORS ENGINEERING  
ACCELERATION TOLERANCE  
G Protective Tilting Aircraft  
Seats.\*  
AD- 741 202

SPACE MAINTENANCE  
ASSEMBLY AND MAINTENANCE OF  
LIGHTWEIGHT METALLIC STRUCTURES IN  
SPACE.\*  
AD- 688 266

SPACECRAFT

Forecast of Human Factors  
Technology Issues and Requirements  
for Advanced Aero-Hydro-Space  
Systems.\*  
AD- 721 713

\*HYPERSONIC CHARACTERISTICS  
Flow-Field Measurements in the  
Windward Surface Shock Layer of  
Space Shuttle Orbiter  
Configurations at Mach Number 8.\*  
AD-A012 875

AERODYNAMIC HEATING  
Recent Notes and Data on  
Interference Heating.\*  
AD- 747 765

REENTRY VEHICLES  
Gemini B Re-Entry Module/Adapter  
Attachment Fairing Aerodynamic  
Heating and Pressure Tests in the  
McDonnell Hypervelocity Impulse  
Tunnel - Series I.\*  
AD- 856 900

Gemini B Re-Entry Module/Adapter  
Attachment Fairing Aerodynamic  
Heating and Pressure Tests in the  
McDonnell Hypervelocity Impulse  
Tunnel - Series I.\*  
AD- 856 901

\*HYPERSONIC FLOW  
Heat-Transfer Tests on the  
Rockwell International Space  
Shuttle Orbiter with and without  
Simulated Protuberances.\*  
AD-A012 876

Viscous Effects on the Static  
Stability and Axial-Force  
Characteristics of the NASA Space  
Shuttle Orbiter at Mach Number 19.\*  
AD-A018 143

Space Shuttle Windward  
Streamline Laminar Viscous Shock-  
Layer Flows at Angle of Attack--  
Comparison of Theory and  
Experiment.\*  
AD-A042 843

\*HYPERSONIC VEHICLES

SUBJECT INDEX-9  
UNCLASSIFIED ZOM07

HEA-HYP

# UNCLASSIFIED

The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume I. User's Manual.\*  
AD- 778 443  
The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume II. Program Formulation.\*  
AD- 778 444  
The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume III. Program Listings.\*  
AD- 778 445

\*INERTIAL GUIDANCE COMPUTERS  
Operation and Service Manual for Computer System Test Console 52E270003. Volume I.\*  
AD- 856 791

TEST EQUIPMENT  
Operation and Service Manual for IMU EFC Test Console 52E270032.\*  
AD- 857 141

\*INERTIAL NAVIGATION  
A Kalman Filter Design for the Space Shuttle Orbiter Inertial Measuring Unit During Deorbit/Reentry Using Global Positioning System Satellite Information.\*  
AD-A055 465

TEST EQUIPMENT  
Operation and Service Manual for Computer EFC Test Console 52E270023, Volume III, Part I.\*  
AD- 856 793  
Operation and Service Manual for Computer EFC Test Console 52E270023, Volume III, Part II, Section IV, List of Subassemblies and Diagrams.\*  
AD- 856 794

\*INSTRUMENTATION  
Space Shuttle External Tank Instrumentation Evaluation.\*  
AD-A070 443

\*INTAKE VALVES  
PERFORMANCE(ENGINEERING)  
Gemini B Orbital Storage Test of Reentry Control System Engine Propellant Valves.\*  
AD- 856 882

\*INTEGRATED CIRCUITS  
RELIABILITY(ELECTRONICS)  
Integrated Data Bus Study.\*  
AD- 875 858

\*INTERFERENCE  
Reprint: Example of Dynamic Interference Effects between Two Oscillating Vehicles.  
AD- 772 888

\*INVERTERS  
POWER SUPPLIES  
Coolant Pump Power Inverter - Breadboard Evaluation Testing.\*  
AD- 856 665

\*IONOSPHERE  
SPACE ENVIRONMENTS  
Ionospheric Aerodynamics Related to Space Vehicles, Space Shuttles and Satellites.\*  
AD- 737 406

\*JOB ANALYSIS  
The Value of an Orbital Minute-- Translation.  
AD-A01. 534

\*KALMAN FILTERING  
A Kalman Filter Design for the Space Shuttle Orbiter Inertial Measuring Unit During Deorbit/Reentry Using Global Positioning System Satellite Information.\*  
AD-A055 465

\*LAMINAR BOUNDARY LAYER  
Space Shuttle Windward Streamline Laminar Viscous Shock-Layer Flows at Angle of Attack-- Comparison of Theory and Experiment.\*

AD-A042 843

\*LAND USE  
Skylab Imagery: Application Reservoir Management in New England.\*  
AD-A030 329

\*LAUNCH VEHICLES  
Delta Interim Upper Stage System Study. Volume I. Executive Summary.\*  
AD-A021 416

Delta Interim Upper Stage System Study. Volume II. Technical Report.\*  
AD-A021 417

Management of DOD Space Payload Integration in the Space Shuttle Era.\*  
AD-A026 384

Data Verification Tests of a 0.02-Scale NASA Space Shuttle Launch Vehicle at Mach Numbers from 0.60 to 1.55.\*  
AD-A069 194

Data Verification Tests of a 0.03-Scale NASA Space Shuttle Launch Vehicle at Mach Numbers from 0.60 to 1.55.\*  
AD-A070 442

CHECKOUT EQUIPMENT  
Operation and Service Manual for Gemini B/MOL/L/J Electrical Interface Substitute 58E040504.\*  
AD- 856 774

FLIGHT SIMULATORS  
Gemini B Procedures Simulator. Performance/Design Requirements.\*  
AD- 856 823

RELIABILITY  
Gemini B Effectiveness Assessment Plan.\*  
AD- 856 753

\*LAUNCHING  
Space Test Program Standard Satellite Launch Optimization

SUBJECT INDEX-10  
UNCLASSIFIED ZOM07

INE-LAU

# UNCLASSIFIED

Study.\*  
AD-A018 177

\*LEAK DETECTORS  
GROUND SUPPORT EQUIPMENT  
Operation and Service Manual for  
Helium Leak Detector Cabinet  
52E420097.\*  
AD- 856 804

\*LEAKAGE(FLUID)  
CHECKOUT PROCEDURES  
Operation and Service Manual for  
ECS Primary O2 and Water System Low  
Pressure Leak Rate Tester  
52E180104.\*  
AD- 857 138

\*LIFTING REENTRY VEHICLES  
AERODYNAMIC CHARACTERISTICS  
Aerodynamic Stability and  
Control, Data, Model 844-2035.\*  
AD- 756 854

AERODYNAMIC HEATING  
Heat-Transfer and Flow-Field  
Tests of the North American  
Rockwell/General Dynamics Convair  
Space Shuttle Configurations.\*  
AD- 755 354

Heat-Transfer Investigation of  
Langley Research Center Delta Wing  
Configurations at Mach Numbers 8  
and 10.5.\*  
AD- 755 355

ATMOSPHERE ENTRY  
Preliminary Handling Qualities  
Requirements for Lifting Re-Entry  
Vehicles during Terminal Flight.\*  
AD- 731 563

\*LIQUID LEVEL GAGES  
Development of a Zero-G Gauging  
System. Volume I.\*  
AD- 779 915

\*LIQUID PROPELLANT ROCKET ENGINES  
BOOSTER ROCKETS  
Air Force Reusable Rocket Engine  
Program XLR129-p-1. Volume I.\*

AD- 881 744

CHECKOUT EQUIPMENT  
Operation and Service Manual for  
Propulsion Components EFC Console  
52E420010.\*  
AD- 857 147

COMBUSTION DEPOSITS  
Effects and Control of  
Contamination from a Scaled MDL  
Attitude Control Thruster in a  
Tangential Orientation.\*  
AD- 860 371

PERFORMANCE(ENGINEERING)  
O2/H2 Advanced Maneuvering  
Propulsion Technology Program  
Engine System Studies. Volume I.  
Aerospike Engine Configuration  
Design and Analysis.\*  
AD- 890 753

O2/H2 Advanced Maneuvering  
Propulsion Technology Program  
Engine System Studies. Volume II.  
25,000 Pound Thrust Bell Engine  
Configuration Design and Analysis.\*  
AD- 894 424

\*LIQUID ROCKET PROPELLANTS  
Development of a Zero-G Gauging  
System. Volume I.\*  
AD- 779 915

PURGING  
Operation and Service Manual for  
Fuel and Oxidizer Flush and Purge  
Units 52E420008, 52E420024.\*  
AD- 857 158

\*LOAD DISTRIBUTION  
CHECKOUT PROCEDURES  
Gemini B Mass Properties Report  
3.3 Operational Support Plan for  
Remote Site Phase.\*  
AD- 856 816

MEASUREMENT  
MDL Mass Properties Report 3.2:  
Verification Plan. Sequence Number  
8256. Data Item Number S-66.\*

AD- 856 523

\*LOGISTICS  
MATHEMATICAL MODELS  
Mathematical model of supply  
support for space operations.  
AD- 615 165

\*LOGISTICS SUPPORT  
Sallyut to be Supplied  
Automatically--Translation.  
AD-A018 540

\*MAGNETIC RECORDING SYSTEMS  
RELIABILITY(ELECTRONICS)  
Vibration Test of a 52-85713-339  
Tape Recorder. Volume II.\*  
AD- 856 894

VIBRATION  
Vibration Test of a 58A880025-1  
Tape Recorder.\*  
AD- 856 537

Vibration Test of a 52-85713-339  
Tape Recorder. Volume I.\*  
AD- 856 543

\*MANAGEMENT INFORMATION SYSTEMS  
Space Transportation System  
Western Launch Site Construction  
Management Information System - A  
Case Study.\*  
AD-A077 675

\*MANAGEMENT PLANNING AND CONTROL  
Centaur Interim Upper Stage  
(IUS) System Study. Volume I.  
Executive Summary.\*  
AD-A021 401

Centaur Interim Upper Stage  
(IUS) System Study. Volume II.  
Technical.\*  
AD-A021 415

Department of Defense Space  
Transportation System Mission  
Operations System Definition -  
Computational Function Allocation.\*  
AD-A022 864

Management of DOD Space Payload  
Integration in the Space Shuttle  
Era.\*

SUBJECT INDEX-11  
UNCLASSIFIED ZOM07

LEA-MAN

# UNCLASSIFIED

AD-A026 384  
 DOD Participation in the Shuttle  
 Program a Management Analysis.\*  
 AD-A027 552  
 Operations Management of DOD  
 Space Missions in the Shuttle Era.\*  
 AD-A038 673

OPERATIONAL READINESS  
 Gemini B Flight Effectiveness  
 Model Report.\*  
 AD- 856 817

\*MANNED SPACECRAFT  
 ABORT  
 Dynamic Stability Testing of  
 Space Shuttle Configurations During  
 Abort Separation at Mach Numbers  
 1.76 and 2.\*  
 AD- 731 771  
 Test Plan Gemini B Adapter  
 Separation Test - Abort Mode.\*  
 AD- 856 756

ACCELEROMETERS  
 Operation and Service Manual for  
 Accelerometer Static Test Unit  
 52E440039.\*  
 AD- 857 151

ADAPTERS  
 Re-Entry Module/Adapter  
 Interconnect Fairing Aerodynamic  
 Heating Wind Tunnel Tests AEDC  
 Tunnel B.\*  
 AD- 856 658

AERODYNAMIC CHARACTERISTICS  
 MOL Rigid Body Fluctuating  
 Pressure Test (1AL2). Volume I.  
 Sequence Number B325. MOL Data  
 Item UT-133.\*  
 AD- 856 546  
 Gemini B Aerodynamic Data Book.  
 Volume II. Static and Oscillatory  
 Aerodynamic Pressures and Airload  
 Distributions.\*  
 AD- 856 733  
 MOL Rigid Body Fluctuating  
 Pressure Test (1AL2). Volume I.  
 Sequence Number B329. MOL Data

Item UT-134.\*  
 AD- 856 743  
 Gemini B Aerodynamic Data Book.  
 Volume I. Aerodynamic  
 Coefficients.\*  
 AD- 859 551

AERODYNAMIC LOADING  
 MOL Rigid Body Fluctuating  
 Pressure Test (1AL2). Sequence  
 Number B333. Data Item UT-135.\*  
 AD- 856 513  
 MOL Rigid Body Fluctuating  
 Pressure Test (1AL2). Volume II.  
 Sequence Number B329. Data Item  
 Number UT-134.\*  
 AD- 856 554

AEROSPACE SYSTEMS  
 Gemini B Oxygen Safety Study.  
 Volume V. Cabin Egress.\*  
 AD- 856 814  
 Analysis of Crew Escape  
 Initiation Response Characteristics  
 Form Titan IIIM/Gemini B State 10.  
 Abort Simulation.\*  
 AD- 856 902

AIR CONDITIONING EQUIPMENT  
 Critical Design Review Package  
 for Environmental Control Unit CEI  
 No. MOL-109A.\*  
 AD- 856 831  
 CDRL Validation Test Plan for  
 Environmental Monitor Unit.  
 Sequence Number T016. Data Item  
 Number UT454.\*  
 AD- 857 012  
 CDRL Acceptance Test Plan for  
 Environmental Control Unit.  
 Sequence Number T055. Data Item  
 Number UT-455.\*  
 AD- 857 013  
 CDRL Acceptance Test Plan for  
 Environmental Monitor Unit.  
 Sequence Number T056. Data Item  
 Number UT455.\*  
 AD- 857 014

AIR TRANSPORTATION  
 A STUDY OF AN ORBITAL

MAINTENANCE AND MATERIAL TRANSFER  
 SHUTTLE.\*  
 AD- 438 517

ALL INERTIAL GUIDANCE  
 Preliminary Gemini B Guidance  
 Equations for the MDL Mission.\*  
 AD- 856 690

ATMOSPHERE ENTRY  
 Reprint: Aerodynamic  
 Characteristics of Two-Dimensional  
 Waverider Configurations.  
 AD- 765 285  
 Environmental Testing of Closed  
 Pore Insulation (CPI). III - Rain  
 Erosion Testing.\*  
 AD- 765 392  
 The Hypersonic Aerodynamic  
 Characteristics of the Gemini Re-  
 Entry Module Based on a Statistical  
 Analysis of Wind Tunnel Test Data.\*  
 AD- 856 691  
 Test Plan for Aerodynamic  
 Heating and Pressure Tests of a 9-  
 Percent Gemini B Re-Entry  
 Configuration Model in the  
 McDonnell Hypervelocity Impulse  
 Tunnel.\*  
 AD- 856 749

ATTITUDE CONTROL SYSTEMS  
 Guidance and Control Mechanics  
 Test - Attitude Control System  
 Analytical Performance  
 Verification.\*  
 AD- 856 672  
 Operation and Service Manual for  
 Hand Controller Tester Kit  
 52E270049.\*  
 AD- 856 795  
 Operation and Service Manual for  
 Attitude Indicator EFC Console  
 52E270035.\*  
 AD- 857 154  
 Effects and Control of  
 Contamination from a Scaled MOL  
 Attitude Control Thruster in a  
 Tangential Orientation.\*  
 AD- 860 371  
 Effects and Control of

SUBJECT INDEX-12  
 UNCLASSIFIED ZOM07

MAN-MAN

UNCLASSIFIED

Contamination From a Scaled MOL  
Translational Thruster in a  
Longitudinal Orientation.\*  
AD- 861 021

BATTERY CHARGERS

Operation and Service Manual for  
ACPU EFC Charger/Tester 52E270071.\*  
AD- 857 173  
Operation and Service Manual for  
Spacecraft Battery Charger  
52E230075.\*  
AD- 857 176

BUFFETING

Wind Tunnel Fluctuating Pressure  
Tests on a 10 Percent Scale Model  
of the Gemini B Spacecraft at Ames  
Unitary Plan Wind Tunnel.\*  
AD- 856 895

CHECKOUT EQUIPMENT

Operation and Service Manual for  
Gemini B/Laboratory Electrical  
Interface Substitute 58E040503.\*  
AD- 856 773  
Operation and Service Manual for  
Gemini B/MOL/L/V Electrical  
Interface Substitute 58E040504.\*  
AD- 856 774  
Operation and Service Manual for  
Spacecraft Command System Checkout  
and Monitor 58E190513.\*  
AD- 856 777  
Operation and Service Manual for  
Spacecraft ECS Test Console  
52E180076.\*  
AD- 856 781  
Operation and Service Manual for  
C-Band Antenna Probe Assembly  
52E190012.\*  
AD- 856 785  
Operation and Service Manual for  
Sequence Control and Monitor  
Console 52E230012 and Electronic  
Timer Control Panel 52E270048.\*  
AD- 856 787  
Operation and Service Manual for  
Spacecraft Battery Load Bank  
52E230073.\*  
AD- 856 789

Operation and Service Manual for  
Attitude Control System Electronics  
EFC Console 52E270002.\*  
AD- 856 790

Operation and Service Manual for  
Air Data System Tester 52E360013.\*  
AD- 856 796  
Operation and Service Manual for  
C and S Beacon EFC Test Bench  
52E190003.\*  
AD- 856 801  
Operation and Service Manual for  
Spacecraft Instrumentation System  
Test Set 52E440040.\*  
AD- 856 806  
RCS Propellant Tank Thermostat  
T-st.\*  
AD- 856 896

CHECKOUT PROCEDURES

MOL Item Test Plan (Computer,  
Programs). Computer Program,  
Operational, All Systems Test  
Equipment Group. Sequence Number  
8295. Data Item Number UT-109.\*  
AD- 856 509  
Operation and Service Manual for  
Sequential System Control and  
Monitor 52E230004.\*  
AD- 857 144  
MOL Ground Test Plan.  
Qualification Test Plan. Sequence  
Number 8286.\*  
AD- 859 311

COMPUTER PROGRAMMING

Item Test Procedures for CEI No.  
MOL805A. Age Test Support  
Programs. CDRL Item 1087. Data  
Item No. UT-468.\*  
AD- 857 015  
Computer Program Category I Test  
Plan for CEI MOL809A. CDRL Item  
T108. Data Item No. UT-467.\*  
AD- 857 019  
Item Test Plan (Computer  
Program) for CEI No. MOL801A. Cite  
Diagnostic and Operational  
Readiness Programs. CDRL Item No.  
B038. Data Item No. UT-413.\*  
AD- 857 020

Item Test Plan AGE Test Support  
Programs. CEI No. MOL805A. CDRL  
Item 1086. Data Item No. UT-  
467.\*  
AD- 857 021

CONTROLLED ATMOSPHERES

MOL Fire Safety Activities  
(Briefing).  
AD- 856 524  
Functional Tests on Two Gemini B  
Coolant Pump Assemblies.\*  
AD- 856 574  
Torque vs Motor Input Current  
for Coolant Pump Motor, P/N 52-  
83700-403, S/N 123-111.\*  
AD- 856 652  
Coolant Pump Assembly. Low  
Temperature Start Test.\*  
AD- 856 670  
MOL Safety Evaluation Based on  
Apollo 204 Review Board Findings  
and Recommendations, and Brooks Air  
Force Base Accident Investigation  
Board Conclusions.\*  
AD- 856 687  
Gemini B Oxygen Safety Study.  
Volume I. Summary and  
Recommendations.\*  
AD- 856 739  
Operation and Service Manual for  
ECS EFC Low Pressure Bench  
52E180010.\*  
AD- 856 775  
Operation and Service Manual for  
LOX and LN2 Installation Kits  
52E180178.\*  
AD- 856 779  
Operation and Service Manual for  
GOX High Pressure Regulator Panel  
52E180030.\*  
AD- 856 780  
Operation and Service Manual for  
ECS Coolant System Leak Rate Tester  
52E180150.\*  
AD- 856 782  
Operation and Service Manual for  
ECS Primary O2 System High Pressure  
Leak Rate Tester 52E180193.\*  
AD- 857 137  
Operation and Service Manual for

SUBJECT INDEX-13  
UNCLASSIFIED Z0W07

MAN-MAN

# UNCLASSIFIED

ECS Primary O2 and Water System Low Pressure Leak Rate Tester  
52E180194.\*  
AD- 857 138  
Operation and Service Manual for ECS EFC High Pressure Bench  
52E180011.\*  
AD- 857 139  
Operation and Service Manual for First and Second Stage Facility N2 Regulators 52E420136, 52E420056.\*  
AD- 857 155  
Operation and Service Manual for Standard Temperature Monitor System 52E440044 and Harness Assembly 52E440033.\*  
AD- 857 168  
Verification Test Plan for Environmental Control Unit CEI 109A. Data Item No. UT-454.\*  
AD- 859 127  
COOLANT PUMPS  
Coolant Pump Power Inverter - Motor Running Characteristics.\*  
AD- 856 878  
Functional Tests on Two Coolant Pump Assemblies.\*  
AD- 856 879  
COOLING  
Operation and Service Manual for ECS EFC Coolant Bench 52E180013.\*  
AD- 857 143  
COOLING + VENTILATING EQUIPMENT  
Operation and Service Manual for Coolant Fluid Transfer Kit 52E180184.\*  
AD- 856 770  
Operation and Service Manual for Spacecraft Ground Cooling Auxiliary Refrigeration Unit 52E180172.\*  
AD- 856 783  
DC TO DC CONVERTERS  
Operation and Service Manual for DC-DC Converter EFC Console 52E440008.\*  
AD- 857 142  
DESCENT TRAJECTORIES  
Program Description for Digital Six-Degree-of-Freedom Reentry Simulation. Gemini B.\*  
AD- 857 030  
EJECTION SEATS  
Gemini B Ejection Seat Functional Test Air Drop Test Plan.\*  
AD- 856 746  
Operation and Service Manual for Ejection Seat Functional Test Fixture 52E040089.\*  
AD- 855 768  
ELECTRIC CABLES  
Immersion Testing of Teflon Bundles.\*  
AD- 856 545  
Massive Overloads on Teflon, Kapton, and Kynar Insulated Wire in an Oxygen Atmosphere.\*  
AD- 856 654  
Wiring Harness Specification.\*  
AD- 856 693  
Evaluation of Wire Characteristics for use on Gemini B.\*  
AD- 856 877  
ELECTRIC RELAYS  
Operation and Service Manual for Relay Panel EFC Console 52E230010.\*  
AD- 857 170  
Operation and Service Manual for Control Relay EFC Tester 52E230014.\*  
AD- 857 175  
ELECTRIC SWITCHES  
EMI Test of Gemini B Limit Switches.\*  
AD- 856 569  
Gemini B Limit Switches. Spacecraft Pressure Effects.\*  
AD- 856 657  
ELECTRIC WIRE  
Small Gage Wire Overload Protection Evaluation.\*  
EXPLOSIVE ACTUATORS  
Performance Comparison of Gemini B Z191 MDF Explosive (DIPAM) to NASA Gemini Z191 MDF Explosive (RDX).  
AD- 856 540  
Operation and Service Manual for Hatch Actuator Test Fixture 52E040094.\*  
AD- 856 769  
FLSC Cutter Assembly/Dual Titanium Straps Gap Test.\*  
AD- 856 883  
EXPLOSIVES INITIATORS  
Operation and Service Manual for Squib Simulator 52E400005.\*  
AD- 857 169  
Operation and Service Manual for Portable Pyrotechnic Tester 52E400004.\*  
AD- 857 172  
EXPANDABLE STRUCTURES  
Simulated Meteoroid Impact Testing on a Composite Expandable Structure for Spacecraft Airlock Application.\*  
AD- 850 512  
EXPLOSIVE ACTUATORS  
Performance Comparison of Gemini B Z191 MDF Explosive (DIPAM) to NASA Gemini Z191 MDF Explosive (RDX).  
AD- 856 540  
Operation and Service Manual for Hatch Actuator Test Fixture 52E040094.\*  
AD- 856 769  
FLSC Cutter Assembly/Dual Titanium Straps Gap Test.\*  
AD- 856 883  
EXPLOSIVES INITIATORS  
Operation and Service Manual for Squib Simulator 52E400005.\*  
AD- 857 169  
Operation and Service Manual for Portable Pyrotechnic Tester 52E400004.\*  
AD- 857 172  
EXTENDABLE STRUCTURES  
MQL Fluid Dynamics Test Pretest Report. MQL Protuberance Heating

SUBJECT INDEX-14  
UNCLASSIFIED Z0M07

MAN-MAN

# UNCLASSIFIED

Wind Tunnel Model. Sequence Number 8334. Data Item Number UT-135.\*  
AD- 856 515  
MOL Preliminary Data Report of the MOL Protuberance Heat Transfer Test (1A11). Volume I. Data Item Number UT-132.\*  
AD- 857 160

EXTRAVEHICULAR ACTIVITY  
Extravehicular Crew Transfer Test Report July 1968.\*  
AD- 856 875  
Extravehicular Crew Transfer Test Report.\*  
AD- 856 903

FIRE SAFETY  
Orbiting Vehicle Nonmetallic Materials Combustion and Atmospheric Contaminant Control Standard for the MOL Orbiting Laboratory Program.\*  
AD- 856 522  
Current Rating of 24 Gauge High Strength Alloy Wire.\*  
AD- 856 533  
Massive Overload of Kynar (5M974 and 5M975) Insulated Wire in Air.\*  
AD- 856 655

Gemini B Oxygen Safety Study. Volume VI. Procedures - Ground Testing and Flight.\*  
AD- 856 662  
Gemini B Oxygen Safety Study. Volume VII. Simplified Two Gas System.\*  
AD- 856 663  
Gemini B Oxygen Safety Study. Volume VIII. Inflight Emergency Operations and Procedures.\*  
AD- 856 664

Orbiting Vehicle Nonmetallic Materials Combustion and Atmospheric Contaminant Control Standard for the MOL Orbiting Laboratory Program.\*  
AD- 856 742  
Gemini B Oxygen Safety Study. Volume II. NASA Gemini Environmental Control System Data.\*

AD- 856 811  
Gemini B Oxygen Safety Study. Volume III. Materials Summary.\*  
AD- 856 812  
Gemini B Oxygen Safety Study. Volume IV. Equipment Review.\*  
AD- 856 813

FITTINGS  
Static Test of the Hoist Loop Support Fitting.\*  
AD- 856 887

FLIGHT CONTROL SYSTEMS  
Operation and Service Manual for Guidance and Control EFC Recorder 52E270069.\*  
AD- 857 153  
Operation and Service Manual for Guidance and Control Recorder Assembly 52E270062.\*  
AD- 857 156

FLIGHT SIMULATORS  
Gemini B Procedures Simulator Initial Version Precision Qualification Test Procedure CEI 58Y010A GBPS Computer Program.\*  
AD- 856 847

FLIGHT TESTING  
Advanced systems testing on a manned orbital space station.  
AD- 601 899

FLUTTER  
MOL Fluid Dynamics Test Pretest Report: Test Line Item 1A35. MOL flutter Test. LM Meteoroid Shield Half-Scale Model. Sequence Number 8332. Data Item Number UT-135.\*  
AD- 856 548

GENERATORS  
Operation and Service Manual for Time Code Generator 52E440027 and Timing Distribution System 52E440065.\*  
AD- 857 177

GROUND SUPPORT EQUIPMENT

Structural and Functional Test of the Gemini B Adapter Ground Coolant Supply Umbilical Disconnect.\*  
AD- 856 570

Operation and Service Manual for External Power System Control and Monitor 52E230005 Spacecraft and Module Test Power Supply 52E230038 Blockhouse DC Power Supply 52E230008.\*  
AD- 856 786

Operation and Service Manual for Blockhouse Power Backup Battery Rack 52E230049 and External Power Control and Monitor Backup Battery Rack 52E230058.\*  
AD- 856 788

Operation and Service Manual for Spacecraft Sequence Recorder 52E230003.\*  
AD- 856 802

Operation and Service Manual for Helium Leak Detector Cabinet 52E420097.\*  
AD- 856 804

Operation and Service Manual for High Pressure GN2/He Pressurization Panel 58E421218.\*  
AD- 856 805

HATCHES  
Gemini B Large Pressure Bulkhead Hatch Element Strength Verification Test.\*  
AD- 856 538

Dissection of Hatch Actuator Breech Cartridge. P/N A218-10 (15-1006).\*

AD- 856 651  
Hatch Actuator Breech Combustible Material Evaluation.\*  
AD- 856 884

Heat Shield Hatch Mechanism - Simulated Altitude and Temperature Functional Test.\*

AD- 856 885  
Heat Shield Hatch Acceptance Test for Functional Fit at Temperature.\*  
AD- 856 886

SUBJECT INDEX-15  
UNCLASSIFIED Z0W07

MAN-MAN



# UNCLASSIFIED

**HEAT EXCHANGERS**  
 Separation Test of Simulated Gemini B Interface Heat Exchanger Coldplates.\*  
 AD- 856 551  
 Interface Heat Exchanger Interstitial Material Element Test. Heat Transfer.\*  
 AD- 856 667  
 Interface Heat Exchanger System Test.\*  
 AD- 856 674  
 Gemini B Interface Heat Exchanger Flow Distribution Test.\*  
 AD- 856 890  
 Condensate Wetting of Suit Heat Exchanger Water Separator Plates.\*  
 AD- 856 891  
 Interface Heat Exchanger Heat Transfer Element Test.\*  
 AD- 856 892

**HEAT SHIELDS**  
 Heat Shield Hatch Acceptance Test for Functional Fit at Temperature.\*  
 AD- 856 656  
 Physical Properties of Vacuum De-oiled DC-325 Ablative Material.\*  
 AD- 856 671

**INERTIAL GUIDANCE**  
 Operation and Service Manual for Computer System Test Console 52E270003. Volume I.\*  
 AD- 856 791

**INERTIAL NAVIGATION**  
 Operation and Service Manual for Computer EFC Test Console 52E270023, Volume III, Part I.\*  
 AD- 856 793  
 Operation and Service Manual for Computer EFC Test Console 52E270023, Volume III, Part II, Section IV, List of Subassemblies and Diagrams.\*  
 AD- 856 794

**INVERTERS**  
 Coolant Pump Power Inverter -

**Breadboard Evaluation Testing.\***  
 AD- 856 665

**LAUNCH VEHICLES**  
 Program Titan IIIM Standard Space Launch Vehicle Component Development Report for the Titan IIIM Stage 1 Combustion Chamber.\*  
 AD- 860 050

**LIFE SUPPORT**  
 Operation and Service Manual for 6000 PSIG Oxygen Supply Cart 58E181231.\*  
 AD- 856 776  
 Operation and Service Manual for Spacecraft Leakage Tester 52E180027.\*  
 AD- 856 778  
 Operation and Service Manual for Dual Gas Flow Control Panel 58E181228.\*  
 AD- 856 784

**LIQUID PROPELLANT ROCKET ENGINES**  
 Operation and Service Manual for Propulsion Components EFC Console 52E420010.\*  
 AD- 857 147

**LIQUID ROCKET PROPELLANTS**  
 Operation and Service Manual for Fuel and Oxidizer Flush and Purge Units 52E420008, 52E420024.\*  
 AD- 85 158

**LOAD DISTRIBUTION**  
 MOL Mass Properties Report 3.2: Verification Plan. Sequence Number 8256. Data Item Number S-66.\*  
 AD- 856 523  
 Gemini B Mass Properties Report 3.3 Operational Support Plan for Remote Site Phase.\*  
 AD- 856 816

**MAGNETIC RECORDING SYSTEMS**  
 Vibration Test of a 58A880025-1 Tape Recorder.\*  
 AD- 856 537  
 Vibration Test of a 52-85713-339

**MANAGEMENT PLANNING AND CONTROL**  
 Gemini B Orbiting Vehicle Effectiveness Assessment Plan Report.\*  
 AD- 856 815

**MODULAR SPACE CONSTRUCTION**  
 Applications Study of Expandable Space Structures.\*  
 AD- 879 707

**NAVIGATION COMPUTERS**  
 MOL Baseline Requirements for Central, Test, and Reentry Modules of the Gemini B Computer Program. Volume III. MOL Baseline Equations Document. Part III. Data Item Number UC-228: Reentry Module Requirements.\*  
 AD- 856 741  
 MOL Baseline Requirements for Central, Test, and Reentry Modules of the Gemini B Computer Program. Volume III. MOL Baseline Equations Document. Part I. Data Item Number UC-228: System Requirements. Central Module Requirements.\*  
 AD- 856 771  
 MOL Baseline Requirements for Central, Test, and Reentry Modules of the Gemini B Computer Program. Volume III. MOL Baseline Equations Document. Part II. Data Item Number UC-228: Test Module Requirements.\*  
 AD- 856 772  
 Operation and Service Manual for Computer Data Display System 58E270803.\*  
 AD- 857 149  
 Operation and Service Manual for ACPU System Tester 52E270086.\*  
 AD- 857 157  
 Operation and Service Manual for

**MAN-NAV**

SUBJECT INDEX-16  
 UNCLASSIFIED ZOMD7

# UNCLASSIFIED

Computer System Test Console  
52E27003. Volume 2.\*  
AD- 857 165

Operation and Service Manual for  
Computer EFC Test Console  
52E27003. Volume II.\*  
AD- 857 166

NOZZLE GAS FLOW  
MOL Fluid Dynamics Preliminary  
Data Report: Thrustor Plume Tests.  
Sequence Number 8319. Item Data  
Number UT-132.\*  
AD- 856 737

OPERATIONAL READINESS  
Gemini B Flight Effectiveness  
Model Report.\*  
AD- 856 817

PANEL BOARDS(ELECTRICITY)  
Vibration Test of 58T030051-1  
Gemini B Adapter Relay Panel  
Assembly.\*  
AD- 856 677

PARACHUTES  
Static Test of Recovery  
Parachute Aft Bridle Fitting and  
Support Structure.\*  
AD- 856 888

PAYLOAD  
Contract End Item Design  
Performance/Verification. Test  
Procedures for MOL Computer  
Integrated Test Equipment for  
Mission Payload System Segment (MOL-  
CITE-MPS) CDRL Item No. T-050 Data  
Item No. UT-451.\*  
AD- 859 092

Checkout System Requirements  
CITE 400 A.\*  
AD- 859 096

PHOTOGRAPHIC LIGHTING SYSTEMS  
Vibration Test of the 52-88115-  
21 Light Assembly. Photographic.\*  
AD- 856 675

PNEUMATIC DEVICES

Operation and Service Manual for  
Nitrogen and Helium Pressurization  
Units 52E420013, 52E420014.\*  
AD- 856 803

POWER SUPPLIES  
Electrical power systems for the  
manned orbiting laboratory.  
AD- 624 668

Operation and Service Manual for  
Umbilical Cable Tester 52E200004.\*  
AD- 857 159

PRESSURE GAGES  
Vibration Qualification Test of  
Shock Mounted 52-88722-5 Low Range  
Pressure Transducer Gemini B-G8Q.\*  
AD- 856 880

PRESSURE SUITS  
Reverse Pressure Effect on Suit  
Demand Regulator.\*  
AD- 856 673

QUALITY CONTROL  
Quality Assurance Plan for CRDL  
Item No. R015. Data Item No. UR-  
418.\*  
AD- 859 098

REENTRY VEHICLES  
Torque Versus Preload. Gemini B  
RV/Adapter Tie Strap.\*  
AD- 856 668

Gemini B - Ejection Seat System  
Test - Dual Ejection Test Plan.\*  
AD- 856 755

Operation and Service Manual for  
Re-Entry Module Instrumentation  
Simulator 52E440041.\*  
AD- 856 807

Gemini B Orbital Storage Test of  
Reentry Control System Engine  
Propellant Valves.\*  
AD- 856 882

Ultimate Internal and External  
Pressure Tests of the Reentry  
Module Structure (Pressure Test of  
Static Reentry Module I). Volume  
I.\*  
AD- 856 889

Gemini B Re-Entry Module/Adapter  
Attachment Fairing Aerodynamic  
Heating and Pressure Tests in the  
McDonnell Hypervelocity Impulse  
Tunnel - Series I.\*  
AD- 856 900

Gemini B Re-Entry Module/Adapter  
Attachment Fairing Aerodynamic  
Heating and Pressure Tests in the  
McDonnell Hypervelocity Impulse  
Tunnel - Series I.\*  
AD- 856 901

RELIABILITY  
Gemini B Effectiveness  
Assessment Plan.\*  
AD- 856 753

RETRO ROCKETS  
Operation and Service Manual for  
Rocket Pressure Test Kit  
52E400002.\*  
AD- 856 797

REVIEWS  
MOL Effectiveness Program Status  
Report. Fourth Quarter 1968.  
Sequence Number 8428. Data Item  
No. UR-116.\*  
AD- 857 161

MOL Effectiveness Program Status  
Report. First Quarter 1969.  
Sequence Number 8428. Data Item  
No. UR-116.\*  
AD- 857 162

SAFETY  
Gemini B Safety Program Status  
Report.\*  
AD- 856 819

SAFETY BELT  
MOL Zero G Development Test  
Report. DAC Line Item 1A32.  
Sequence Number 8300.\*  
AD- 856 544

SATELLITE ANTENNAS  
G. B. Q. Antenna Tests.\*  
AD- 856 541

Gemini B Antenna System

Operation and Service Manual for  
Nitrogen and Helium Pressurization  
Units 52E420013, 52E420014.\*  
AD- 856 803

POWER SUPPLIES  
Electrical power systems for the  
manned orbiting laboratory.  
AD- 624 668

Operation and Service Manual for  
Umbilical Cable Tester 52E200004.\*  
AD- 857 159

PRESSURE GAGES  
Vibration Qualification Test of  
Shock Mounted 52-88722-5 Low Range  
Pressure Transducer Gemini B-G8Q.\*  
AD- 856 880

PRESSURE SUITS  
Reverse Pressure Effect on Suit  
Demand Regulator.\*  
AD- 856 673

QUALITY CONTROL  
Quality Assurance Plan for CRDL  
Item No. R015. Data Item No. UR-  
418.\*  
AD- 859 098

REENTRY VEHICLES  
Torque Versus Preload. Gemini B  
RV/Adapter Tie Strap.\*  
AD- 856 668

Gemini B - Ejection Seat System  
Test - Dual Ejection Test Plan.\*  
AD- 856 755

Operation and Service Manual for  
Re-Entry Module Instrumentation  
Simulator 52E440041.\*  
AD- 856 807

Gemini B Orbital Storage Test of  
Reentry Control System Engine  
Propellant Valves.\*  
AD- 856 882

Ultimate Internal and External  
Pressure Tests of the Reentry  
Module Structure (Pressure Test of  
Static Reentry Module I). Volume  
I.\*  
AD- 856 889

Gemini B Re-Entry Module/Adapter  
Attachment Fairing Aerodynamic  
Heating and Pressure Tests in the  
McDonnell Hypervelocity Impulse  
Tunnel - Series I.\*  
AD- 856 900

Gemini B Re-Entry Module/Adapter  
Attachment Fairing Aerodynamic  
Heating and Pressure Tests in the  
McDonnell Hypervelocity Impulse  
Tunnel - Series I.\*  
AD- 856 901

RELIABILITY  
Gemini B Effectiveness  
Assessment Plan.\*  
AD- 856 753

RETRO ROCKETS  
Operation and Service Manual for  
Rocket Pressure Test Kit  
52E400002.\*  
AD- 856 797

REVIEWS  
MOL Effectiveness Program Status  
Report. Fourth Quarter 1968.  
Sequence Number 8428. Data Item  
No. UR-116.\*  
AD- 857 161

MOL Effectiveness Program Status  
Report. First Quarter 1969.  
Sequence Number 8428. Data Item  
No. UR-116.\*  
AD- 857 162

SAFETY  
Gemini B Safety Program Status  
Report.\*  
AD- 856 819

SAFETY BELT  
MOL Zero G Development Test  
Report. DAC Line Item 1A32.  
Sequence Number 8300.\*  
AD- 856 544

SATELLITE ANTENNAS  
G. B. Q. Antenna Tests.\*  
AD- 856 541

Gemini B Antenna System

SUBJECT INDEX-17  
UNCLASSIFIED ZOM07

MAN-MAN

# UNCLASSIFIED

Testing.\*  
AD- 856 849 Antenna Tests.\*  
AD- 856 876 G.B.Q. Antenna Tests.\*

SHAPED CHARGES  
Development Test of Z100 FLSC  
cutter Assembly with Dual Titanium  
Straps.\*  
AD- 856 553

SHIELDING  
Vulnerability of manned orbital  
command posts to natural space  
radiations.  
AD- 609 501  
Geminl B Blast Shield:  
Mechanical Properties of Aluminum  
Flexcore.\*  
AD- 856 573  
Tension and Shear Strength of  
Inserts in the Geminl B Blast  
Shield.\*  
AD- 856 669

SIMULATION  
Item Test Plan (Computer  
Program) Geminl B Procedures  
Simulator. Sequence Number 29T.  
Data Item U-7-216.\*  
AD- 856 898

SIMULATORS  
Geminl B Procedures Simulator.  
Performance/Design Requirements.\*  
AD- 856 820  
Category I Test Plan Geminl B  
Procedures Simulator.\*  
AD- 856 899

SOLID PROPELLANT ROCKET ENGINES  
Subscale Rocket Impingement -  
Blast Shield and Laboratory Tunnel  
Specimen.\*  
AD- 856 881

SPACECRAFT COMPONENTS  
MOL Ground Test Plan:  
development Test Plan. Sequence  
Number 8285. MOL Data Item Number  
UT-101.\*

AD- 856 521  
MOL Ground Test Plan:  
effectiveness Test Plan. Sequence  
Number 8288. Data Item Number UT-  
004.\*  
AD- 856 536  
Static Test of the Geminl B  
adapter for the Critical  
Combination of Ascent Phase Loads  
and Elevated Temperature.\*  
AD- 856 653  
MOL Ground Test Plan, Acceptance  
Test Plan. Volume I. Ave  
Components through Subsystems and  
Age CEI's Sequence Number 8287.  
Data Item Number UT-101.\*  
AD- 856 841  
GE-AVE Maintainability Program  
Plan. CDRL Item No. R014. Data  
Item No. UR-417.\*  
AD- 857 017

STABILITY  
Experimental investigation of  
the effects of elasticity on the  
stability of manned rotating space  
stations.  
AD- 620 866

STABILIZED PLATFORMS  
Operation and Service Manual for  
Inertial Platform Test Console  
52E270020.\*  
AD- 856 792  
Operation and Service Manual for  
IMU EFC Test Console 52E270032.\*  
AD- 857 141  
Operation and Service Manual for  
IMU Pressurization Kit 52E270010.\*  
AD- 857 167  
Operation and Service Manual for  
IMU Auxiliary Age Platform  
Alignment Mount Reference  
52E270006, IMU Test Point Panel  
52E270008, Three-Axis Platform  
Dolly 52E270036, IMU Test Cable Set  
52E270053.\*  
AD- 857 174

STORAGE BATTERIES  
Operation and Service Manual for

Spacecraft Battery Balancing Unit  
52E230131.\*  
AD- 857 146

STRUCTURAL PROPERTIES  
Structural Specification Geminl  
B Spacecraft.\*  
AD- 856 517  
Geminl B Structural  
Qualification Test Plan.\*  
AD- 856 750

SYSTEMS ENGINEERING  
GEMINI-B Pre-Ignition  
Effectiveness Model Report.\*  
AD- 856 740

TELEMETRY SYSTEMS  
Operation and Service Manual for  
T/M Remote Displays Power Supply  
Assembly 52E440032.\*  
AD- 856 808  
Operation and Service Manual for  
Split Phase Converter 52E440049.\*  
AD- 856 809  
Operation and Service Manual for  
Telemetry Control and Checkout  
Console 52E440053.\*  
AD- 856 810  
Operation and Service Manual for  
PCM Telemetry Ground Station  
52E440011.\*  
AD- 857 171

TEST METHODS  
MOL Item Test Plan (Computer  
Programs). Computer Program.  
Compiler, Manned Orbiting  
Laboratory, Test Oriented Language.  
Sequence Number 3294.\*  
AD- 856 511  
Geminl B Spacecraft Systems Test  
Plan.\*  
AD- 856 897

TEST SETS  
CITE Interfaces.\*  
AD- 859 093  
MOL-CITE Hardware/Software  
Interface Definition Document.  
Revision B.\*

SUBJECT INDEX-18  
UNCLASSIFIED ZOM07

MAN-MAN

# UNCLASSIFIED

AD- 859 095  
THERMOCOUPLES  
Operation and Service Manual for  
Thermocouple Checkout Box  
52E440047.\*  
AD- 857 164

TIMING DEVICES  
Operation and Service Manual for  
Time Reference System EFC Console  
52E270012.\*  
AD- 857 140

TRANSDUCERS  
Operation and Service Manual for  
Ratio Meter 52E440036.\*  
AD- 857 152

TRANSFER TRAJECTORIES  
Description of Retrograde Time  
Predict and Orbit Navigation  
Simulation Program (KAK2) Gemini  
B.\*  
AD- 857 031

TRANSMITTER RECEIVERS  
Operation and Service Manual for  
HF and Audio EFC Test Bench  
52E19001.\*  
AD- 857 145

TRANSPORTATION  
Operation and Service Manual for  
Spacecraft Transportation Trailers  
52E010016.\*  
AD- 856 767  
Age CEI Design/Performance  
Verification Test Plan for CEI No.  
MOL 104A. Transporter - Mission  
Module for the Manned Orbiting  
Laboratory (MOL) System. CDRL Item  
No. T014/UT-454.\*  
AD- 857 026  
Procedural Support Data MOL  
mission Module Transporter.\*  
AD- 859 125

WEIGHTLESSNESS  
MOL Zero G Development Test  
Report. DD Form 1423 Data Item UT-

(110).\*  
AD- 856 542

\*MARS PROBES  
SPACE STATIONS  
Mars-1 (Interplanetary station):  
Description of the interplanetary  
trajectory, instrumentation  
environmental conditions.  
AD- 601 509

\*MATERIALS  
SPACE CAPSULES  
Gemini B Oxygen Safety Study.  
Volume II. NASA Gemini  
Environmental Control System Data.\*  
AD- 856 811  
Gemini B Oxygen Safety Study.  
Volume III. Materials Summary.\*  
AD- 856 812  
Gemini B Oxygen Safety Study.  
Volume IV. Equipment Review.\*  
AD- 856 813

SPECIFICATIONS  
Orbiting Vehicle Nonmetallic  
Materials Combustion and  
Atmospheric Contaminant Control  
Standard for the MOL Orbiting  
Laboratory Program.\*  
AD- 856 742

\*MATHEMATICAL MODELS  
LOGISTICS  
Mathematical model of supply  
support for space operations.  
AD- 615 165

\*METAL PLATES  
DISCONNECT FITTINGS  
Tension and Shear Strength of  
Inserts in the Gemini B Blast  
Shield.\*  
AD- 856 669

SEPARATION  
Separation Test of Simulated  
Gemini B Interface Heat Exchanger  
Coldplates.\*  
AD- 856 551

STRUCTURAL PROPERTIES  
Gemini B Blast Shield:  
mechanical Properties of Aluminum  
Flexcore.\*  
AD- 856 573

\*MICROWAVE COMMUNICATIONS  
MOUNTAINS  
FOREIGN SCIENCE BULLETIN. VOLUME  
5. NUMBER 4. APRIL 1969.\*  
AD- 687 326

\*MILITARY RESEARCH  
AGARD Highlights.\*  
AD-A050 761

\*MILITARY SATELLITES  
Department of Defense Space  
Transportation System (DOD/STS)  
mission Operations Systems  
Definition Mission Assessment  
Report: Operations Design Mission  
A.\*  
AD-A045 100

\*MISSION PROFILES  
RENDEZVOUS SPACECRAFT  
Chemical Orbit-to-Orbit Shuttle  
Task Summary.\*  
AD- 742 984

\*MULTIPLEXING  
Proceedings of the Multiplex  
Data Bus Conference Held at  
Baltimore Towers Hotel, Dayton, Ohio  
on 3-5 November 1976.\*  
AD-A033 793

\*NAVIGATION COMPUTERS  
CHECKOUT EQUIPMENT  
Operation and Service Manual for  
ACPU System Tester 52E270086.\*  
AD- 857 157  
Operation and Service Manual for  
Computer EFC Test Console  
52E270023. Volume II.\*  
AD- 857 166

COMPUTER PROGRAMMING  
Description of Retrograde Time  
Predict and Orbit Navigation

SUBJECT INDEX-19  
UNCLASSIFIED ZOM07

MAR-NAV

# UNCLASSIFIED

Simulation Program (KAK2) Gemini  
B.\*

AD- 857 031

## DISPLAY SYSTEMS

Operation and Service Manual for  
Computer Data Display System  
58E270803.\*

AD- 857 149

## MANNED SPACECRAFT

MOL Baseline Requirements for  
Central, Test, and Reentry Modules  
of the Gemini B Computer Program.  
Volume III. MOL Baseline Equations  
Document. Part III. Data Item  
Number UC-228: Reentry Module  
Requirements.\*

AD- 856 741

MOL Baseline Requirements for  
Central, Test, and Reentry Modules  
of the Gemini B Computer Program.  
Volume III. MOL Baseline Equations  
Document. Part I. Data Item  
Number UC-228: System  
Requirements, Central Module  
Requirements.\*

AD- 856 771

MOL Baseline Requirements for  
Central, Test, and Reentry Modules  
of the Gemini B Computer Program.  
Volume III. MOL Baseline Equations  
Document. Part II. Data Item  
Number UC-228: Test Module  
Requirements.\*

AD- 856 772

## TEST EQUIPMENT

Operation and Service Manual for  
Computer System Test Console  
52E270003. Volume 2.\*

AD- 857 165

## \*NITROGEN

Interruption of Denitrogenation  
by Air-Breathing.\*

AD-A020 049

## CONTROL SYSTEMS

Operation and Service Manual for  
First and Second Stage Facility N2

Regulators 52E420136, 52E420056.\*

AD- 857 155

## \*NONMETALS STANDARDS

Orbiting Vehicle Nonmetallic  
Materials Combustion and  
Atmospheric Contaminant Control  
Standard for the MOL Orbiting  
Laboratory Program.\*

AD- 856 522

## \*NOZZLE GAS FLOW MANNED SPACECRAFT

M.L Fluid Dynamics Preliminary  
Data Report: Thrustor Plume Tests.  
Sequence Number B319. Item Data  
Number UT-132.\*

AD- 856 737

## \*NURSES

AEROSPACE MEDICINE  
Reprint: Clinical aspects of  
aerospace nursing.

AD- 623 967

## \*OPERATIONAL READINESS

MANAGEMENT PLANNING AND CONTROL  
Gemini B Flight Effectiveness  
Model Report.\*

AD- 856 817

## \*ORBITS

Viscous Effects on the Static  
Stability and Axial-Force  
Characteristics of the NASA Space  
Shuttle Orbiter at Mach Number 19.\*

AD-A018 143

Maximum Payload Orbital  
Transfers for a Space Shuttle Solid-  
Fuel Upper Stage Vehicle.\*

AD-A034 947

Optimal Three Burn Orbit  
Transfer.\*

AD-A039 257

Station Keeping of the Space  
Shuttle in the Vicinity of a  
Deployed Payload.\*

AD-A056 109

## MEASUREMENT

Overall distance scale of the  
earrings: Determination by using high-  
altitude satellites.

AD- 622 479

## \*OSCILLATION

Space Shuttle Response to  
Acoustic Combustion Instability in  
the solid Rocket Boosters.\*

AD-A037 157

## \*OXYGEN

Interruption of Denitrogenation  
by Air-Breathing.\*

AD-A020 049

## LEAKAGE (FLUID)

Operation and Service Manual for  
ECS Primary O2 System High Pressure  
Leak Rate Tests. 52E180193.\*

AD- 857 137

## \*OXYGEN EQUIPMENT

PRESSURE REGULATORS  
Operation and Service Manual for  
GOX High Pressure Regulator Panel  
52E180030.\*

AD- 856 780

## \*PANEL BOARDS (ELECTRICITY) RELIABILITY (ELECTRONICS)

Vibration Test of 58T030051-1  
Gemini B Adapter Relay Panel  
Assembly.\*

AD- 856 677

## \*PARACHUTES LOADS (FORCES)

Static Test of Recovery  
Parachute Aft Baffle Fitting and  
Support Structure.\*

AD- 856 688

## \*PAYLOAD

Space Test Program Standard  
Satellite Launch Optimization  
Study.\*

AD-A018 177

## CHECKOUT EQUIPMENT

Contract End Item Design

SUBJECT INDEX-20  
UNCLASSIFIED ZOWC7

NIT-PAY

# UNCLASSIFIED

Performance/Verification, Test Procedures for MOL Computer Integrated Test Equipment for Mission Payload System Segment (MOL-CITE-MPSS) CDRL Item No. T-050 Data Item No. UT-451.\*  
AD- 859 092  
Checkout System Requirements CITE 400 A.\*  
AD- 859 096

\*PAYLOAD ANALYSES  
Management of DOD Space Payload Integration in the Space Shuttle Era.\*  
AD-A026 384  
Maximum Payload Orbital Transfers for a Space Shuttle Solid-Fuel Upper Stage Vehicle.\*  
AD-A034 947

\*PERFORMANCE (HUMAN)  
AEROSPACE SYSTEMS  
Analysis of Crew Escape Initiation Response Characteristics Form Titan IIIM/Gemini B State 'D' Abort Simulation.\*  
AD- 856 902

\*PHASE CONTROL DEVICES  
TELEMETRY SYSTEMS  
Operation and Service Manual for Split Phase Converter 52E440049.\*  
AD- 856 809

\*PHOTOGRAPHIC LIGHTING SYSTEMS  
RELIABILITY (ELECTRONICS)  
Vibration Test of the 52-88115-21 Light Assembly, Photographic.\*  
AD- 856 675

\*PHYSICS LABORATORIES  
REPORTS  
Quarterly Bulletin of the Division of Mechanical Engineering and the National Aeronautical Establishment.\*  
AD- 743 096

\*PLANNING PROGRAMMING BUDGETING  
Major Range Acquisitions for the

Space Shuttle/Satellite Control Satellite Era.\*  
AD-A038 670

\*PLANTS (BOTANY)  
Impact of Space Shuttle Support Facilities Construction on Special Interest Plant Species (Vandenberg AFB, CA).  
AD-A049 177

\*PLASMAS (PHYSICS)  
USSR  
Scientific results from the flight of Vantars automatic ionospheric laboratories. Part II-- Translation.  
AD- 704 045

\*PNEUMATIC DEVICES  
CONTROL PANELS  
Operation and Service Manual for High Pressure GN2/He Pressurization Panel 58E421218.\*  
AD- 856 805

INSTRUMENTATION  
Operation and Service Manual for Nitrogen and Helium Pressurization Units 52E420013, 52E420014.\*  
AD- 856 803

\*POLYMERIC FILMS  
Skylab 0024 Thermal Control Coatings and Polymeric Films Experiment.\*  
AD-A046 208  
Results of the Polymeric Films Skylab 0024 Experiment.\*  
AD-A046 210

\*POROUS MATERIALS  
SPODUMENE  
Development of Beta-Spodumene Closed Pore Insulation (CPI).  
AD- 729 882

\*POWDER METALLURGY  
ALUMINUM  
FOREIGN SCIENCE BULLETIN, VOLUME 5, NUMBER 4, APRIL 1969.\*

AD- 687 326

\*POWER  
SPACE STATIONS  
Electrical power systems for the manned orbiting laboratory.  
AD- 624 668

\*POWER SUPPLIES  
GROUND SUPPORT EQUIPMENT  
Operation and Service Manual for External Power System Control and Monitor 52E230005 Spacecraft and Module Test Power Supply 52E230038 Blockhouse DC Power Supply 52E230008.\*  
AD- 856 786

TELEMETRY SYSTEMS  
Operation and Service Manual for T/M Remote Displays Power Supply Assembly 52E440052.\*  
AD- 856 808

\*PRESSURE GAGES  
RELIABILITY  
Vibration Qualification Test of Shock Mounted 52-88722-5 Low Range Pressure Transducer Gemini B-GBQ.\*  
AD- 856 880

\*PRESSURE REGULATORS  
OXYGEN EQUIPMENT  
Operation and Service Manual for GOX High Pressure Regulator Panel 52E180030.\*  
AD- 856 780

PRESSURE SUITS  
Reverse Pressure Effect on Suit Demand Regulator.\*  
AD- 856 673

\*PRESSURE SUITS  
HEAT EXCHANGERS  
Condensate Wetting of Suit Heat Exchanger Water Separator Plates.\*  
AD- 856 891

PRESSURE REGULATORS  
Reverse Pressure Effect on Suit

SUBJECT INDEX-21  
UNCLASSIFIED ZOW07

PAY-PRE

# UNCLASSIFIED

Demand Regulator.\*  
AD- 856 673

SPACE CREWS  
MOL Zero G Development Test  
Report. DD Form 1423 Data Item UT-  
(110).\*

AD- 856 542

\*PROBES(ELECTROMAGNETIC)  
SATELLITE ANTENNAS  
Operation and Service Manual for  
C-Band Antenna Probe Assembly  
52E190012.\*

AD- 856 785

\*PROPELLANT CONTROL  
REENTRY VEHICLES  
Gemini B Orbital Storage Test of  
Reentry Control System Engine  
Propellant Valves.\*

AD- 856 882

\*PROPELLANT TANKS  
BUCKLING  
Buckling Analysis of Shuttle  
Disposable Liquid Hydrogen Tank  
with Floating Rings.\*

AD- 743 508

\*PROTECTIVE COATINGS  
Skylab D024 Thermal Control  
Coatings and Polymeric Films  
Experiment.\*

AD-A046 208

\*QUALITY CONTROL  
SPECIFICATIONS  
Quality Assurance Plan for CRDL  
Item No. R015. Data Item No. UR-  
418.\*

AD- 859 098

\*RADIOBIOLOGY  
SPACE ENVIRONMENTS  
Vulnerability of manned orbital  
command posts to natural space  
radiations.

AD- 609 501

\*RAINDROPS  
EROSION  
Environmental Testing of Closed  
Pore Insulation (CPI). III - Rain  
Erosion Testing.\*

AD- 765 392

\*RANGES(FACILITIES)  
Major Range Acquisitions for the  
Space Shuttle/Satellite Control  
Satellite Era.\*

AD-A038 670

\*RECORDING SYSTEMS  
INSTRUCTION MANUALS  
Operation and Service Manual for  
Guidance and Control Recorder  
Assembly 52E270062.\*

AD- 857 156

TEST EQUIPMENT  
Operation and Service Manual for  
Guidance and Control EFC Recorder  
52E270069.\*

AD- 857 153

\*RECOVERABLE BOOSTER MOTORS  
COST EFFECTIVENESS  
The Space Shuttle as an Element  
in the National Space Program.\*

AD- 729 770

SEPARATION  
Abort Separation, Longitudinal  
Force, and Moment Characteristics  
of McDonnell Douglas Booster and  
Orbiter Space Shuttle Vehicles at  
Mach Numbers 2.0 to 6.0.\*

AD- 738 645

\*RECOVERY  
A Remote, Unmanned Dewatering  
System for Recovery of the Solid  
Rocket Booster of the Space Shuttle  
Program.\*

AD-A063 077

\*RECOVERY VEHICLES  
Solid Rocket Booster Dewatering

System.\*  
AD-A028 742

\*REENTRY VEHICLES  
HYPERSONIC CHARACTERISTICS  
The Hypersonic Aerodynamic  
Characteristics of the Gemini Re-  
Entry Module Based on a Statistical  
Analysis of Wind Tunnel Test Data.\*

AD- 856 691

Test Plan for Aerodynamic  
Heating and Pressure Tests of a 9-  
Percent Gemini B Re-Entry  
Configuration Model in the  
McDonnell Hypervelocity Impulse  
Tunnel.\*

AD- 856 749

Gemini B Re-Entry Module/Adapter  
Attachment Fairing Aerodynamic  
Heating and Pressure Tests in the  
McDonnell Hypervelocity Impulse  
Tunnel - Series I.\*

AD- 856 900

Gemini B Re-Entry Module/Adapter  
Attachment Fairing Aerodynamic  
Heating and Pressure Tests in the  
McDonnell Hypervelocity Impulse  
Tunnel - Series I.\*

AD- 856 901

MODELS(SIMULATIONS)  
Operation and Service Manual for  
Re-Entry Module Instrumentation  
Simulator 52E440041.\*

AD- 856 807

PROPELLANT CONTROL  
Gemini B Orbital Storage Test of  
Reentry Control System Engine  
Propellant Valves.\*

AD- 856 882

SPACE PROPULSION  
SPACECRAFT UTILIZING THE LIFTING  
AND BALLISTIC REENTRY TECHNIQUES.  
PART I. SPACECRAFT MANEUVERING-  
AND DESCENT-SYSTEM HARDWARE:  
COMPILATION AND ANALYSIS OF  
EXTRACTS AND REVIEWS.\*

AD- 647 646

SUBJECT INDEX-22  
UNCLASSIFIED Z0M07

PRO-REE

# UNCLASSIFIED

**\*REFRACTORY MATERIALS**  
**SPODUMENE**  
 Development of Beta-Spodumene  
 Closed Pore Insulation (CPI).  
 AD- 729 882

**\*RENDEZVOUS GUIDANCE**  
**SPACECRAFT**  
 Theoretical method for precision  
 rendezvous spacecraft station-  
 keeping.  
 AD- 612 048

**\*RENDEZVOUS SPACECRAFT**  
**ABORT**  
 Abort Separation, Longitudinal  
 Force, and Moment Characteristics  
 of McDonnell Douglas Booster and  
 Orbiter Space Shuttle Vehicles at  
 Mach Numbers 2.0 to 6.0.\*  
 AD- 738 645

**AERODYNAMIC CHARACTERISTICS**  
 Reprint: Aerodynamic  
 Characteristics of Two-Dimensional  
 Waverider Configurations.  
 AD- 765 285

**AERODYNAMIC HEATING**  
 Environmental Testing of Closed  
 Pore Insulation (CPI). II. Salt  
 Spray Testing.\*  
 AD- 757 424

Heat-Transfer and Flow-Field  
 Tests of the McDonnell Douglas-  
 Martin Marietta Space Shuttle  
 Configurations.\*  
 AD- 759 176

**ATMOSPHERE ENTRY**  
 Environmental Testing of Closed  
 Pore Insulation (CPI) I - ARC Jet  
 Testing.\*  
 AD- 756 204

**ATTITUDE CONTROL SYSTEMS**  
 NASA-Conair ACS Space Shuttle  
 Study at Mach Number 8.0.\*  
 AD- 759 578

**COMBUSTION CHAMBERS**

Orbit-to-Orbit Shuttle Engine  
 Design Study. Book I. Parametric  
 Cycle Study.\*  
 AD- 900 190

**CONTROL SYSTEMS**  
 Integrated Data Bus Study.\*  
 AD- 875 858

**DELTA WINGS**  
 Heat-Transfer and Flow-Field  
 Tests of the North American  
 Rockwell/General Dynamics Convair  
 Space Shuttle Configurations.\*  
 AD- 75- 354

Heat-Transfer Investigation of  
 Langley Research Center Delta Wing  
 Configurations at Mach Numbers 8  
 and 10.5.\*  
 AD- 755 355

**FEASIBILITY STUDIES**  
 A STUDY OF AN ORBITAL  
 MAINTENANCE AND MATERIAL TRANSFER  
 SHUTTLE.\*  
 AD- 438 517

**GASEOUS ROCKET PROPELLANTS**  
 On the Simulation of Plumes from  
 High Pressure Hydrogen/Oxygen  
 Rocket Engines.\*  
 AD- 733 896

**HEAT SHIELDS**  
 Rain Erosion Characteristics of  
 Thermal Protection System Materials  
 at Subsonic Velocities.\*  
 AD- 750 793

**LIFTING REENTRY VEHICLES**  
 Aerodynamic Stability and  
 Control, Data, Model 844-2035 \*  
 AD- 756 854

**LIQUID ROCKET OXIDIZERS**  
 Orbit-to-Orbit Shuttle  
 Propellant Integration and Handling  
 Study.\*  
 AD- 735 290

**LUNAR TRAJECTORIES**

Comparison of Chemical and  
 Nuclear Propulsion for Lunar and  
 Cislunar Transportation Systems.\*  
 AD- 731 963

**MISSION PROFILES**  
 Chemical Orbit-to-Orbit Shuttle  
 Task Summary.\*  
 AD- 742 984

**SEPARATION**  
 Dynamic Stability Testing of  
 Space Shuttle Configurations during  
 Abort Separation at Mach Numbers  
 1.76 and 2.\*  
 AD- 731 771

Abort Separation Pressure  
 Distributions on McDonnell-Douglas  
 Space Shuttle Configurations at  
 Mach Numbers 2, 3, and 5.\*  
 AD- 742 995

**SPACE PROPULSION**  
 Air Force Reusable Rocket Engine  
 Program XLR129-P-1. Volume I.\*  
 AD- 881 744

O2/H2 Advanced Maneuvering  
 Propulsion Technology Program  
 Engine System Studies. Volume I.  
 Aerospike Engine Configuration  
 Design and Analysis.\*  
 AD- 890 753

O2/H2 Advanced Maneuvering  
 Propulsion Technology Program  
 Engine System Studies. Volume II.  
 25,000 Pound Thrust Bell Engine  
 Configuration Design and Analysis.\*  
 AD- 894 424

**SUPERSONIC CHARACTERISTICS**  
 Reprint: Supersonic Dynamic  
 Stability Experiments on the Space  
 Shuttle.  
 AD- 748 562

**TRAJECTORIES**  
 Optimal Trajectories for the  
 Flyback Shuttle.\*  
 AD- 746 656

**TRANSPORTATION**

SUBJECT INDEX-23  
 UNCLASSIFIED ZOM07

REF-REN



# UNCLASSIFIED

The Space Shuttle as an Element  
in the National Space Program.\*  
AD- 729 770

## \*RENDEZVOUS TRAJECTORIES

Time-Optimal Rendezvous for an  
Upper Stage Vehicle of the Space  
Transportation System.\*  
AD-A019 328

## \*RESEARCH MANAGEMENT

DOD Participation in the Shuttle  
Program a Management Analysis.\*  
AD-A027 552

## \*RESOURCE MANAGEMENT

SkyLab Imagery: Application  
Reservoir Management in New  
England.\*  
AD-A030 329

## \*RESPIRATION

Interruption of Denitrogenation  
by Air-Breathing.\*  
AD-A020 049

## \*RETRO ROCKETS

### TEST EQUIPMENT

Operation and Service Manual for  
Rocket Pressure Test Kit  
52E400002.\*  
AD- 856 797

## \*ROCKET ENGINES

### EXHAUST FLAMES

Gemini B Blast Shield:  
mechanical Properties of Aluminum  
Flexcore.\*  
AD- 856 573

## \*SAFETY BELTS

### WEIGHTLESSNESS

MOL Zero G Development Test  
Report. DAC Line Item 1A032.  
Sequence Number B300.\*  
AD- 856 544

## \*SANDWICH CONSTRUCTION

EXPANDABLE STRUCTURES  
SELF-RIGIDIZING EXPANDABLE-  
SANDWICH AEROSPACE SHELTERS AND

## SOLAR COLLECTORS.\*

AD- 656 747

## \*SATELLITE ANTENNAS

ANTENNA RADIATION PATTERNS  
G. B. Q. Antenna Tests.\*  
AD- 856 541

## MANNED SPACECRAFT

Gemini B Antenna System  
Testing.\*  
AD- 856 849  
G.B.Q. Antenna Tests.\*  
AD- 856 876

## PROBES(ELECTROMAGNETIC)

Operation and Service Manual for  
C-Band Antenna Probe Assembly  
52E190012.\*  
AD- 856 785

## \*SATELLITES(ARTIFICIAL)

USSR  
Translation of the 1963 Russian  
publication on space stations and  
artificial satellites.  
AD- 631 585

## \*SCIENTIFIC RESEARCH

CANADA  
Quarterly Bulletin of the  
Division of Mechanical Engineering  
and the National Aeronautical  
Establishment.\*  
AD- 743 096

## \*SCIENTIFIC SATELLITES

USSR  
A Soviet Space Station Soon--  
Translation.  
AD- 860 583

## \*SEPARATION

Reprint: Example of Dynamic  
Interference Effects between Two  
Oscillating Vehicles.  
AD- 772 888

## \*SHAPED CHARGES

RELIABILITY  
Development Test of Z100 FLSC

Cutter Assembly with Dual Titanium  
Straps.\*  
AD- 856 553

## \*SHELLS(STRUCTURAL FORMS)

AEROELASTICITY  
Aeroelastic Stability of Thin  
Shell Structures at Subsonic Mach  
Numbers and the Active Suppression  
of Flutter Phenomena.\*  
AD- 741 899

## \*SHIELDING

### FLUTTER

MOL Fluid Dynamics Test Pretest  
Report: Test Line Item 1A35. MOL  
flutter Test. LM Meteoroid Shield  
Half-Scale Model. Sequence Number  
B332. Data Item Number UT-135.\*  
AD- 856 548

## MANNED SPACECRAFT

Vulnerability of manned orbital  
command posts to natural space  
radiations.  
AD- 609 501

## SPACE ENVIRONMENTS

Radiation protection for manned  
orbiting space stations.  
AD- 615 665

## \*SHOCK TUBES

### LABORATORIES

New Shock Tube Laboratory at  
Aachen, Germany.\*  
AD- 741 191

## \*SHOCK WAVES

### INTERACTIONS

Recent Notes and Data on  
Interference Heating.\*  
AD- 747 765

## \*SILICONE PLASTICS

### ABLATION

Physical Properties of Vacuum De-  
ciled DC-325 Ablative Material.\*  
AD- 856 671

## \*SIMULATORS

SUBJECT INDEX-24

UNCLASSIFIED ZOM07

REN-SIM

UNCLASSIFIED

ACCEPTABILITY  
 Category I Test Plan Gemini B  
 Procedures Simulator.\*  
 AD- 856 899

MANNED SPACECRAFT  
 Gemini B Procedures Simulator.  
 Performance/Design Requirements.\*  
 AD- 856 820

\*SOLAR COLLECTORS  
 EXPANDABLE STRUCTURES  
 SELF-RIGIDIZING EXPANDABLE-  
 SANDWICH AEROSPACE SHELTERS AND  
 SOLAR COLLECTORS.\*  
 AD- 656 747

\*SOLAR FURNACES  
 SPACE STATIONS  
 Reprint: Industrial Chemistry  
 in Space.  
 AD- 720 136

\*SOLID PROPELLANT ROCKET ENGINES  
 Solid Rocket Booster Dewatering  
 System.\*  
 AD-A028 742

Studies of the Exhaust Products  
 from Solid Propellant Rocket  
 Motors.\*  
 AD-A029 569

IGNITION  
 GEMINI-B Pre-Ignition  
 Effectiveness Model Report.\*  
 AD- 856 740

\*CPACE  
 NURSES  
 Reprint: Clinical aspects of  
 aerospace nursing.  
 AD- 623 967

USSR  
 Translation of the 1963 Russian  
 publication on space stations and  
 artificial satellites.  
 AD- 631 585

\*SPACE CAPSULES  
 MATERIALS

Gemini B Oxygen Safety Study.  
 Volume II. NASA Gemini  
 Environmental Control System Data.\*  
 AD- 856 811

Gemini B Oxygen Safety Study.  
 Volume III. Materials Summary.\*  
 AD- 856 812

Gemini B Oxygen Safety Study.  
 Volume IV. Equipment Review.\*  
 AD- 856 813

\*SPACE CREWS  
 Department of Defense Space  
 Transportation System Mission  
 Operations Systems Definition  
 Mission Assessment Report:  
 Operations Design Mission A.\*  
 AD-A018 215

The Value of an Orbital Minute--  
 Translation.  
 AD-A018 534

\*SPACE ENVIRONMENTS  
 MILITARY SATELLITES  
 Vulnerability of manned orbital  
 command posts to natural space  
 radiations.  
 AD- 609 501

\*SPACE FLIGHT  
 COSTS  
 Advanced systems testing on a  
 manned orbital space station.  
 AD- 601 899

LOGISTICS  
 Extravehicular Activities System  
 Effectiveness. Volume I Phase II  
 Summary Report.\*  
 AD- 847 481

Extravehicular Activities System  
 Effectiveness. Volume III Phase II  
 Effectiveness Computer Model.\*  
 AD- 847 482

SCIENTIFIC RESEARCH  
 Translation of Russian articles  
 on cosmic research.  
 AD- 603 012

\*SPACE MAINTENANCE

FEASIBILITY STUDIES  
 AN ASSESSMENT OF THE  
 PRACTICALITY OF ORBITAL  
 MAINTENANCE.\*  
 AD- 658 454

HUMAN FACTORS ENGINEERING  
 ASSEMBLY AND MAINTENANCE OF  
 LIGHTWEIGHT METALLIC STRUCTURES IN  
 SPACE.\*  
 AD- 688 266

SYMPOSIA  
 NATIONAL CONFERENCE ON SPACE  
 MAINTENANCE AND EXTRAVEHICULAR  
 ACTIVITIES (2ND). 6-8 AUGUST 1968.  
 LAS VEGAS, NEVADA.\*  
 AD- 688 246

\*SPACE MISSIONS  
 Department of Defense Space  
 Transportation System Mission  
 Operations Systems Definition  
 Mission Assessment Report:  
 Operations Design Mission A.\*  
 AD-A018 215

DOD/STS Mission Operations  
 Systems Definition Mission  
 Assessment Report: Operations  
 Design Mission B.\*  
 AD-A019 274

Department of Defense Space  
 Transportation System Mission  
 Operations System Definition -  
 Computational Function Allocation.\*  
 AD-A022 864

Operations Management of DOD  
 Space Missions in the Shuttle Era.\*  
 AD-A038 673

Department of Defense Space  
 Transportation System (DOD/STS)  
 Mission Operations Systems  
 Definition Mission Assessment  
 Report: Operations Design Mission  
 A.\*  
 AD-A045 100

\*SPACE NAVIGATION  
 N-BODY PROBLEM  
 Optimal Control of Libration  
 Point Space Station.\*

SUBJECT INDEX-25  
 UNCLASSIFIED  
 ZOM07

SOL-SPA

# UNCLASSIFIED

- AD- 724 113 The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume II. Program Formulation.\* AD- 778 444
- \*SPACE PROPULSION COSTS Comparison of Chemical and Nuclear Propulsion for Lunar and Cis-lunar Transportation Systems.\* AD- 731 963
- REENTRY VEHICLES SPACECRAFT UTILIZING THE LIFTING AND BALLISTIC REENTRY TECHNIQUES. PART I. SPACECRAFT MANEUVERING- AND DESCENT-SYSTEM HARDWARE: COMPILATION AND ANALYSIS OF EXTRACTS AND REVIEWS.\* AD- 647 646
- RENDEZVOUS SPACECRAFT 02/H2 Advanced Maneuvering Propulsion Technology Program Engine System Studies. Volume I. Aerospike Engine Configuration Design and Analysis.\* AD- 890 753
- 02/H2 Advanced Maneuvering Propulsion Technology Program Engine System Studies. Volume II. 25,000 Pound Thrust Bell Engine Configuration Design and Analysis.\* AD- 894 424
- \*SPACE SCIENCES REVIEWS Current and Projected Government and Commercial Space Activities.\* AD-8004 682
- \*SPACE SHUTTLES Heat-Transfer Tests of Two Space Shuttle Orbiter Configurations at Mach Number 8.\* AD- 772 687
- Reprint: Example of Dynamic Interference Effects between Two Oscillating Vehicles AD- 772 888
- The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume I. User's Manual.\* AD- 778 443
- AD- 724 113 The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume II. Program Formulation.\* AD- 778 444
- The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume III. Program Listings.\* AD- 778 445
- Development of a Zero-G Gauging System. Volume I.\* AD- 779 915
- Department of Defense Space Shuttle on-Board Software Requirements.\* AD- 76 123
- Pitch-, Yaw-, and Roll-Damping Characteristics of a Shuttle Orbiter at M = 8.\* AD- A011 648
- Flow-Field Measurements in the Windward Surface Shock Layer of Space Shuttle Orbiter Configurations at Mach Number 8.\* AD- A012 875
- Heat-Transfer Tests on the Rockwell International Space Shuttle Orbiter with and without Simulated protuberances.\* AD- A012 876
- Pressure and Heat Transfer Tests on the NASA Space Shuttle External Tank at Mach Number 16.\* AD- A015 743
- Aerothermal Tests of the Space Shuttle External Tank Insulating Material.\* AD- A017 497
- Viscous Effects on the Static Stability and Axial-Force Characteristics of the NASA Space Shuttle Orbiter at Mach Number 19.\* AD- A018 143
- Space Test Program Standard Satellite Launch Optimization Study.\* AD- A018 177
- Department of Defense Space Transportation System Mission Operations Systems Definition Mission Assessment Report: Operations Design Mission A.\* AD- 778 443
- AD- A018 215 Real Gas Scale Effects on Hypersonic Laminar Boundary-Layer Parameters Including Effects of Entropy-Layer Swallowing.\* AD- A018 755
- DOD/STS Mission Operations Systems Definition Mission Assessment Report: Operations Design Mission 3.\* AD- A019 274
- Time-Optimal Rendezvous for an Upper Stage Vehicle of the Space Transportation System.\* AD- A019 328
- Centaur Interim Upper Stage (IUS) System Study. Volume I. Executive Summary.\* AD- A021 401
- Centaur Interim Upper Stage (IUS) System Study. Volume II. Technical.\* AD- A021 415
- Delta Interim Upper Stage System Study. Volume I. Executive Summary.\* AD- A021 416
- Delta Interim Upper Stage System Study. Volume II. Technical Report.\* AD- A021 417
- Heat-Transfer Tests on the Rockwell International Space Shuttle Orbiter with Boundary-Layer Trips (OH-54).\* AD- A024 553
- Heat-Transfer Tests of a 0.0175-Scale Model of the Space Shuttle at Mach Numbers 2.5, 3.5, 4.5, and 5.5.\* AD- A025 080
- Astronaut Manual EVA Guidance: An Operational Procedure.\* AD- A026 267
- Management of DOD Space Payload Integration in the Space Shuttle Era.\* AD- A026 384
- DOD Participation in the Shuttle Program a Management Analysis.\* AD- A027 552
- AD- A018 215 Real Gas Scale Effects on Hypersonic Laminar Boundary-Layer Parameters Including Effects of Entropy-Layer Swallowing.\* AD- A018 755
- DOD/STS Mission Operations Systems Definition Mission Assessment Report: Operations Design Mission 3.\* AD- A019 274
- Time-Optimal Rendezvous for an Upper Stage Vehicle of the Space Transportation System.\* AD- A019 328
- Centaur Interim Upper Stage (IUS) System Study. Volume I. Executive Summary.\* AD- A021 401
- Centaur Interim Upper Stage (IUS) System Study. Volume II. Technical.\* AD- A021 415
- Delta Interim Upper Stage System Study. Volume I. Executive Summary.\* AD- A021 416
- Delta Interim Upper Stage System Study. Volume II. Technical Report.\* AD- A021 417
- Heat-Transfer Tests on the Rockwell International Space Shuttle Orbiter with Boundary-Layer Trips (OH-54).\* AD- A024 553
- Heat-Transfer Tests of a 0.0175-Scale Model of the Space Shuttle at Mach Numbers 2.5, 3.5, 4.5, and 5.5.\* AD- A025 080
- Astronaut Manual EVA Guidance: An Operational Procedure.\* AD- A026 267
- Management of DOD Space Payload Integration in the Space Shuttle Era.\* AD- A026 384
- DOD Participation in the Shuttle Program a Management Analysis.\* AD- A027 552

SUBJECT INDEX-26  
UNCLASSIFIED Z0707

SPA-SPA

# UNCLASSIFIED

Reprint: Nonequilibrium  
Stagnation Region Aerodynamic  
Heating of Hypersonic Glide  
Vehicles.  
AD-A030 389

Space Shuttle: A Case Study in  
Economic Analysis.\*  
AD-A033 871

Simulated Thermal Protection  
Tile Roughness Effects on Windward  
Surface Heat Transfer on the  
Rockwell International Space  
Shuttle Orbiter.\*  
AD-A034 733

Maximum Payload Orbital  
Transfers for a Space Shuttle Solid-  
Fuel Upper Stage Vehicle.\*  
AD-A034 947

Space Shuttle Response to  
Acoustic Combustion Instability in  
the Solid Rocket Boosters.\*  
AD-A037 157

Major Range Acquisitions for the  
Space Shuttle/Satellite Control  
Satellite Era.\*  
AD-A038 670

Operations Management of DOD  
Space Missions in the Shuttle Era.\*  
AD-A038 673

Roughness and Wall Temperature  
Effects on Boundary-Layer  
Transition on a 0.0175-Scale Space  
Shuttle Orbiter Model Tested at  
Mach Number 8.\*  
AD-A038 895

Optimal Three Burn Orbit  
Transfers.\*  
AD-A039 257

A Mathematical Model for the  
Longitudinal Control System of the  
Space Shuttle Orbiter.\*  
AD-A041 158

Space Shuttle Windward  
Streamline Laminar Viscous Shock-  
Layer Flows at Angle of Attack--  
Comparison of Theory and  
Experiment.\*  
AD-A042 843

Department of Defense Space  
Transportation System (DOD/STS)  
mission Operations Systems

Definition Mission Assessment  
Report: Operations Design Mission  
A.\*  
AD-A045 100

A Kalman Filter Design for the  
Space Shuttle Orbiter Inertial  
Measuring Unit During  
Deorbit/Reentry Using Global  
Positioning System Satellite  
Information.\*  
AD-A055 465

Station Keeping of the Space  
Shuttle in the Vicinity of a  
Deployed Payload.\*  
AD-A056 109

NASA/RI OA 208 and 209  
Verification Static-Stability and  
Control-Effectiveness Tests of the  
Space Shuttle Orbiter Vehicle at  
Mach Numbers from 2 to 8.\*  
AD-A057 080

Test Results from the  
NASA/Rockwell International Space  
Shuttle Integrated Vehicle Test (IH  
85) Conducted in the AEDC-VKF  
Tunnel A.\*  
AD-A058 141

Heat-Transfer Tests on the Nose  
of the Shuttle Orbiter External  
Tank (FH-15).\*

AD-A058 693

Infrared and Phase-Change Paint  
Measurements of Heat-Transfer on  
the Space Shuttle Orbiter.\*  
AD-A059 796

Shuttle Impact on Communications  
Satellites as Seen from the User  
Viewpoint.\*  
AD-A061 036

Effects of Vertical Tail  
Flexibility on the Aerodynamic  
Characteristics of a 0.03-Scale  
NASA Space Shuttle Orbiter at Mach  
Numbers from 0.90 to 1.55.\*  
AD-A062 377

Space Shuttle.\*  
AD-A063 248

STS Utilization Study.\*  
AD-A064 681

STS Utilization Study Experiment  
Assessments.\*

AD-A064 766

Standard Test Rack Exploitation  
Study.\*  
AD-A064 773

Standard Test Rack Concept  
Definition Study, Manned Interface  
Definition.\*  
AD-A065 097

Space Shuttle Digital Computer  
Simulation Benchmark.\*  
AD-A065 480

Five Year Plan for Space Test  
Program.\*  
AD-A065 866

Standard Test Rack. Concept  
Definition Study. Structural  
Analysis Report.\*  
AD-A066 247

Space Shuttle--Translation.  
AD-A066 278

Data Verification Tests of a  
0.02-Scale NASA Space Shuttle  
Launch Vehicle at Mach Numbers from  
0.60 to 1.55.\*  
AD-A069 194

Data Verification Tests of a  
0.03-Scale NASA Space Shuttle  
Launch Vehicle at Mach Numbers from  
0.60 to 1.55.\*  
AD-A070 442

Space Shuttle External Tank  
Instrumentation Evaluation.\*  
AD-A070 443

Aerothermal Evaluation of the  
Space Shuttle Solid Rocket Booster  
and Solid Rocket Motor Thermal  
Protection System.\*  
AD-A070 444

Department of Defense Space  
Transportation System Orbiter  
Avionics Software Integration  
Study. Analysis of Orbiter Systems  
to Meet MASE Requirements.\*  
AD-A070 634

\*SPACE STATIONS  
The Value of an Orbital Minute--  
Translation.  
AD-A018 534

Salyut to be Supplied  
Automatically--Translation.

SUBJECT INDEX-27  
UNCLASSIFIED ZOM07

SPA-SPA

UNCLASSIFIED

AD-A018 540 Skylab Imagery: Application Reservoir Management in New England.\* AD-A030 329 Skylab D024 Thermal Control Coatings and Polymeric Films Experiment.\* AD-A046 208 Results of the Polymeric Films Skylab D024 Experiment.\* AD-A046 210 Reprint: Particle Induced Visual Phenomena in Space. AD-A053 213 Reprint: Role of Nuclear Stars in the Light Flashes Observed on Skylab 4. AD-A053 214 STS Utilization Study Experiment Assessments.\* AD-A064 766 Standard Test Rack Exploitation Study.\* AD-A064 773 Artificial Heavenly Palaces-- Translation. AD-A075 198 ACCELEROMETERS Operation and Service Manual for Accelerometer Static Test Unit 52E440039.\* AD- 857 151

ACTUATORS Hatch Actuator Breech Combustible Material Evaluation.\* AD- 856 884

ADAPTERS Static Test of the Gemini B Adapter for the Critical Combination of Ascent Phase Loads and Elevated Temperature.\* AD- 856 653 Re-Entry Module/Adapter Interconnect Fairing Aerodynamic Heating Wind Tunnel Tests AEDC tunnel B.\* AD- 856 658

Test Plan Gemini B Adapter Separation Test - Abort Mode.\* AD- 856 756

ADAPTIVE CONTROL SYSTEMS Optimal Control of Libration Point Space Station.\* AD- 724 113

AERODYNAMIC CHARACTERISTICS MOL Rigid Body Fluctuating Pressure Test (1AL2). Volume I. Sequence Number B325. MOL Data Item UT-133.\* AD- 856 546 Gemini B Aerodynamic Data Book. Volume II. Static and Oscillatory Aerodynamic Pressures and Airload Distributions.\* AD- 856 733 Gemini B Aerodynamic Data Book. Volume I. Aerodynamic Coefficients.\* AD- 859 551

AERODYNAMIC LOADING MOL Rigid Body Fluctuating Pressure Test (1AL2). Sequence Number B333. Data Item UT-135.\* AD- 856 513 MOL Rigid Body Fluctuating Pressure Test (1AL2). Volume II. Sequence Number B329. Data Item Number UT-134.\* AD- 856 554

AEROSPACE SYSTEMS Gemini B Oxygen Safety Study. Volume V. Cabin Egress.\* AD- 856 814 Analysis of Crew Escape Initiation Response Characteristics Form Titan IIIM/Gemini B State 'D' Abort Simulation.\* AD- 856 902

AIR CONDITIONING EQUIPMENT Critical Design Review Package for Environmental Control Unit CEI No. MOL-109A.\* AD- 856 831

CDRL Validation Test Plan for Environmental Monitor Unit. Sequence Number T016. Data Item Number UT454.\* AD- 857 012 CDRL Acceptance Test Plan for Environmental Control Unit. Sequence Number T055. Data Item Number UT-455.\* AD- 857 013 CDRL Acceptance Test Plan for Environmental Monitor Unit. Sequence Number T056. Data Item Number UT455.\* AD- 857 014 Verification Test Plan for Environmental Control Unit CEI 109A. Data Item No. UT-454.\* AD- 859 127

ATTITUDE CONTROL SYSTEMS Guidance and Control Mechanics Test - Attitude Control System Analytical Performance Verification.\* AD- 856 672 Operation and Service Manual for Hand Controller Tester Kit 52E270049.\* AD- 856 795 Operation and Service Manual for Attitude Indicator EFC Console 52E270035.\* AD- 857 154

BATTERY CHARGERS Operation and Service Manual for ACPU EFC Charger/Tester 52E270071.\* AD- 857 173 Operation and Service Manual for Spacecraft Battery Charger 52E230075.\* AD- 857 176

BUFFETING Wind Tunnel Fluctuating Pressure Tests on a 10 Percent Scale Model of the Gemini B Spacecraft at Ames Unitary Plan Wind Tunnel.\* AD- 856 895

SUBJECT INDEX-28  
UNCLASSIFIED ZOM07

SPA-SPA

UNCLASSIFIED

CHECKOUT EQUIPMENT

Operation and Service Manual for Gemini B/Laboratory Electrical Interface Substitute 58E040503.\*

AD- 856 773

Operation and Service Manual for Gemini B/MCL/L/V Electrical Interface Substitute 58E040504.\*

AD- 856 774

Operation and Service Manual for Spacecraft Command System Checkout and Monitor 58E190513.\*

AD- 856 777

Operation and Service Manual for Spacecraft ECS Test Console 52E180076.\*

AD- 856 781

Operation and Service Manual for C-Band Antenna Probe Assembly 52E190012.\*

AD- 856 785

Operation and Service Manual for Sequence Control and Monitor Console 52E230012 and Electronic Timer Control Panel 52E270048.\*

AD- 856 787

Operation and Service Manual for Spacecraft Battery Load Bank 52E230073.\*

AD- 856 789

Operation and Service Manual for Attitude Control System Electronics EFC Console 52E270002.\*

AD- 856 790

Operation and Service Manual for Air Data System Tester 52E360013.\*

AD- 856 796

Operation and Service Manual for C and S Beacon EFC Test Bench 52E190003.\*

AD- 856 801

Operation and Service Manual for Spacecraft Instrumentation System Test Set 52E440040.\*

AD- 856 806

RCS Propellant Tank Thermostat Test.\*

AD- 856 896

CHECKOUT PROCEDURES

MOL Item Test Plan (Computer

Programs). Computer Program, Operational, All Systems Test Equipment Group. Sequence Number 8295. Data Item Number UT-109.\*

AD- 856 509

Operation and Service Manual for Sequential System Control and Monitor 52E230004.\*

AD- 857 144

MOL Ground Test Plan. Qualification Test Plan. Sequence Number 8286.\*

AD- 859 311

CHEMICAL ENGINEERING Reprint: Industrial Chemistry in Space.

AD- 720 136

COMPUTER PROGRAMMING Item Test Procedures for CEI No. MOL805A. Age Test Support Programs. CDRL Item T087. Data Item No. UT-468.\*

AD- 857 015

Computer Program Category I Test Plan for CEI MOL809A. CDRL Item T108. Data Item No. UT-467.\*

AD- 857 019

Item Test Plan (Computer Program) for CEI No. MOL801A. Cite Diagnostic and Operational Readiness Programs. CDRL Item No. 8038. Data Item No. UT-413.\*

AD- 857 020

Item Test Plan AGE Test Support Programs. CEI No. MOL805A. CDRL item T086. Data Item No. UT-467.\*

AD- 857 021

CONTROLLABLE-THRUST ROCKET MOTORS Effects and Control of Contamination From a Scaled MOL translational Thruster in a Longitudinal Orientation.\*

AD- 861 021

CONTROLLED ATMOSPHERES MOL Fire Safety Activities (Briefing).\*

AD- 857 021

Operation and Service Manual for Gemini B/Laboratory Electrical Interface Substitute 58E040503.\*

AD- 856 773

Operation and Service Manual for Gemini B/MCL/L/V Electrical Interface Substitute 58E040504.\*

AD- 856 774

Operation and Service Manual for Spacecraft Command System Checkout and Monitor 58E190513.\*

AD- 856 777

Operation and Service Manual for Spacecraft ECS Test Console 52E180076.\*

AD- 856 781

Operation and Service Manual for C-Band Antenna Probe Assembly 52E190012.\*

AD- 856 785

Operation and Service Manual for Sequence Control and Monitor Console 52E230012 and Electronic Timer Control Panel 52E270048.\*

AD- 856 787

AD- 856 524 Functional Tests on Two Gemini B Coolant Pump Assemblies.\*

AD- 856 574

Torque vs Motor Input Current for Coolant Pump Motor, P/N 52-83700-403, S/N 123-111.\*

AD- 856 652

Coolant Pump Assembly, Low Temperature Start Test.\*

AD- 856 670

MOL Safety Evaluation Based on Apollo 204 Review Board Findings and Recommendations, and Brooks Air Force Base Accident Investigation Board Conclusions.\*

AD- 856 687

Gemini B Oxygen Safety Study. Volume I. Summary and Recommendations.\*

AD- 856 739

Operation and Service Manual for ECS EFC Low Pressure Bench 52E180010.\*

AD- 856 775

Operation and Service Manual for LOX and LN2 Installation Kits 52E180178.\*

AD- 856 779

Operation and Service Manual for GOX High Pressure Regulator Panel 52E180030.\*

AD- 856 780

Operation and Service Manual for ECS Coolant System Leak Rate Tester 52E180150.\*

AD- 856 782

Operation and Service Manual for ECS Primary O2 System High Pressure Leak Rate Tester 52E180193.\*

AD- 857 137

Operation and Service Manual for ECS Primary O2 and Water System Low Pressure Leak Rate Tester 52E180194.\*

AD- 857 138

Operation and Service Manual for ECS EFC High Pressure Bench 52E180011.\*

AD- 857 139

Operation and Service Manual for

SPA-SPA

SUBJECT INDEX-29

ZOM07

UNCLASSIFIED

UNCLASSIFIED

First and Second Stage Facility N2 Regulators 52E420136, 52E420056.* AD- 857 155	Functional Test Air Drop Test Plan.* AD- 856 746	AD- 856 529
Operation and Service Manual for Standard Temperature Monitor System 52E440044 and Harness Assembly 52E440033.* AD- 857 168	Gemini B - Ejection Seat System Test - Dual Ejection Test Plan.* AD- 856 755	ELECTROMAGNETIC COMPATIBILITY Electromagnetic Compatibility Requirements MOL Systems Orbiting Vehicle.* AD- 856 516
COOLANT PUMPS Coolant Pump Power Inverter - Motor Running Characteristics.* AD- 856 878	Operation and Service Manual for Ejection Seat Functional Test Fixture 52E040089.* AD- 856 768	ELECTRONIC EQUIPMENT Gemini B Electronic Systems Test Unit (ESTU) Test Plan.* AD- 856 752
Functional Tests on Two Coolant Pump Assemblies.* AD- 856 879	ELECTRIC CABLES Immersion Testing of Teflon Bundles.* AD- 856 545	ENVIRONMENTAL TESTS Environmental and Test Requirements Gemini B Spacecraft.* AD- 856 512
COOLING Operation and Service Manual for ECS EFC Coolant Bench 52E180013.* AD- 857 143	Massive Overloads on Teflon, Kapton, and Kynar Insulated Wire in an Oxygen Atmosphere.* AD- 856 654	EXPANDABLE STRUCTURES SELF-RIGIDIZING EXPANDABLE- SANDWICH AEROSPACE SHELTERS AND SOLAR COLLECTORS.* AD- 656 747
COOLING + VENTILATING EQUIPMENT Operation and Service Manual for Coolant Fluid Transfer Kit 52E180184.* AD- 856 770	Wiring Harness Specification.* AD- 856 693	PRE-PHASE I FOR DESIGN, FABRICATION, AND ORBITAL TESTING OF A SPACE STRUCTURE.* AD- 815 716
Operation and Service Manual for Spacecraft Ground Cooling Auxiliary Refrigeration Unit 52E180172.* AD- 856 783	Evaluation of Wire Characteristics for Use on Gemini B.* AD- 856 877	Applications Study of Expandable Space Structures.* AD- 879 707
COSTS ORBITAL BASING: KEY TO LOW COST SPACE OPERATIONS.* AD- 655 342	ELECTRIC POWER PRODUCTION Electrical power systems for the manned orbiting laboratory. AD- 624 668	EXPLOSIVE ACTUATORS Performance Comparison of Gemini B Z191 MDF Explosive (DIPAM) to NASA Gemini Z191 MDF Explosive (RDX).*
DC TO DC CONVERTERS Operation and Service Manual for DC-DC Converter EFC Console 52E440008.* AD- 857 142	Control Relay EFC Tester 52E230014.* AD- 857 175	AD- 856 540 Operation and Service Manual for Hatch Actuator Test Fixture 52E040094.* AD- 856 769
DESCENT TRAJECTORIES Program Description for Digital Six-Degree-of-Freedom Reentry Simulation. Gemini B.* AD- 857 030	ELECTRIC SWITCHES EMI Test of Gemini B Limit Switches.* AD- 856 569	FLSC Cutter Assembly/Dual Titanium Straps Gap Test.* AD- 856 883
EJECTION SEATS Gemini B Ejection Seat	Gemini B Limit Switches. Spacecraft Pressure Effects.* AD- 856 657	EXPLOSIVES INITIATORS Operation and Service Manual for Squid Simulator 52E400005.* AD- 857 169
	ELECTRIC WIRE Small Gage Wire Overload Protection Evaluation.*	Operation and Service Manual for Portable Pyrotechnic Tester

SUBJECT INDEX-30  
UNCLASSIFIED ZOM07

SPA-SPA

# UNCLASSIFIED

52E400004.\*  
AD- 857 172

## EXTENDABLE STRUCTURES

MOL Fluid Dynamics Test Pretest Report. MOL Protuberance Heating Wind Tunnel Model. Sequence Number 8334. Data Item Number UT-135.\*  
AD- 855 515

MOL Preliminary Data Report of the MOL Protuberance Heat Transfer Test (IALL). Volume I. Data Item Number UT-132.\*  
AD- 857 160

## EXTRAVEHICULAR ACTIVITY

Extravehicular Activities System Effectiveness. Volume I Phase II Summary Report.\*  
AD- 847 481

Extravehicular Activities System Effectiveness. Volume III Phase II Effectiveness Computer Model.\*  
AD- 847 482

Extravehicular Crew Transfer Test Report July 1968.\*  
AD- 856 875

Extravehicular Crew Transfer Test Report.\*  
AD- 856 903

## FEASIBILITY STUDIES

A Soviet Space Station Soon-- Translation.  
AD- 860 583

## FIRE SAFETY

Orbiting Vehicle Nonmetallic Materials Combustion and Atmospheric Contaminant Control Standard for the MOL Orbiting Laboratory Program.\*  
AD- 856 522

Current Rating of 24 Gauge High Strength Alloy Wire.\*  
AD- 856 533

Massive Overload of Kynar (5M974 and 5M976) Insulated Wire in Air.\*  
AD- 856 655

Gemini B Oxygen Safety Study. Volume VI. Procedures - Ground

## Testing and Flight.\*

AD- 856 662  
Gemini B Oxygen Safety Study. Volume VII. Simplified Two Gas System.\*

AD- 856 663  
Gemini B Oxygen Safety Study. Volume VIII. Inflight Emergency Operations and Procedures.\*

AD- 856 664  
Orbiting Vehicle Nonmetallic Materials Combustion and Atmospheric Contaminant Control Standard for the MOL Orbiting Laboratory Program.\*

AD- 856 742  
Gemini B Oxygen Safety Study. Volume II. NASA Gemini Environmental Control System Data.\*

AD- 856 811  
Gemini B Oxygen Safety Study. Volume III. Materials Summary.\*

AD- 856 812  
Gemini B Oxygen Safety Study. Volume IV. Equipment Review.\*

## FITTINGS

Static Test of the Hoist Loop Support Fitting.\*  
AD- 856 887

## FLIGHT CONTROL SYSTEMS

Operation and Service Manual for Guidance and Control EFC Recorder 52E270069.\*

AD- 857 153  
Operation and Service Manual for Guidance and Control Recorder Assembly 52E270062.\*  
AD- 857 156

## FLIGHT SIMULATORS

Gemini B Procedures Simulator Initial Version Precision Qualification Test Procedure CEI 58Y010A GPS Computer Program.\*  
AD- 856 847

## FLUTTER

Flutter Test of a 0.50-Scale MOL

Meteoroid Shield Panel at Mach Numbers from 1.2 to 2.5.\*  
AD- 848 174

MOL Fluid Dynamics Test Pretest Report: Test Line Item 1A35. MOL Flutter Test. LM Meteoroid Shield Half-Scale Model. Sequence Number 8332. Data Item Number UT-135.\*  
AD- 856 548

## FUEL CONSUMPTION

OPTIMUM FEEDBACK CONTROL OF A SYNODIC SATELLITE.\*  
AD- 695 043

## GENERATORS

Operation and Service Manual for Time Code Generator 52E440027 and Timing Distribution System 52E440065.\*  
AD- 857 177

## GROUND SUPPORT EQUIPMENT

Structural and Functional Test of the Gemini B Adapter Ground Coolant Supply Umbilical Disconnect.\*

AD- 856 570  
Operation and Service Manual for External Power System Control and Monitor 52E230005 Spacecraft and Module Test Power Supply 52E230038 Blockhouse DC Power Supply 52E230008.\*

AD- 856 786  
Operation and Service Manual for Blockhouse Power Backup Battery Rack 52E230049 and External Power Control and Monitor Backup Battery Rack 52E230058.\*

AD- 855 788  
Operation and Service Manual for Spacecraft Sequence Recorder 52E230003.\*

AD- 856 802  
Operation and Service Manual for Helium Leak Detector Cabinet 52E420097.\*

AD- 856 804  
Operation and Service Manual for High Pressure GN2/He Pressurization

SUBJECT INDEX-31

UNCLASSIFIED ZOMQ7

SPA-SPA



# UNCLASSIFIED

Panel 58E421218.\*

AD- 856 805

## HATCHES

Gemini B Large Pressure Bulkhead  
Hatch Element Strength Verification  
Test.\*

AD- 856 538

Dissection of Hatch Actuator  
Breech Cartridge, P/N A218-10 (15-  
1006).\*

AD- 856 651

Heat Shield Hatch Mechanism -  
Simulated Altitude and Temperature  
Functional Test.\*

AD- 856 885

Heat Shield Hatch Acceptance  
Test for Functional Fit at  
Temperature.\*

AD- 856 886

## HEAT EXCHANGERS

Separation Test of Simulated  
Gemini B Interface Heat Exchanger  
Coldplates.\*

AD- 856 551

Interface Heat Exchanger  
Interstitial Material Element Test.  
Heat Transfer.\*

AD- 856 667

Interface Heat Exchanger System  
Test.\*

AD- 856 674

Gemini B Interface Heat  
Exchanger Flow Distribution Test.\*

AD- 856 890

Condensate Wetting of Suit Heat  
Exchanger Water Separator Plates.\*

AD- 856 891

Interface Heat Exchanger Heat  
Transfer Element Test.\*

AD- 856 892

## HEAT SHIELDS

Heat Shield Hatch Acceptance  
Test for Functional Fit at  
Temperature.\*

AD- 856 656

Physical Properties of Vacuum De-  
Oiled DC-325 Ablative Material.\*

AD- 856 671

## HYPERSONIC TEST VEHICLES

The Hypersonic Aerodynamic  
Characteristics of the Gemini Re-  
Entry Module Based on a Statistical  
Analysis of Wind Tunnel Test Data.\*

AD- 856 691

Test Plan for Aerodynamic  
Heating and Pressure Tests of a 9-  
Percent Gemini B Re-Entry

Configuration Model in the  
McDonnell Hypervelocity Impulse  
Tunnel.\*

AD- 856 749

## INERTIAL GUIDANCE

Operation and Service Manual for  
Computer System Test Console  
52E270003. Volume I.\*

AD- 856 791

## INERTIAL NAVIGATION

Operation and Service Manual for  
Computer EFC Test Console  
52E270023, Volume III, Part I.\*

AD- 856 793

Operation and Service Manual for  
Computer EFC Test Console  
52E270023, Volume III, Part II,  
Section IV, List of Subassemblies  
and Diagrams.\*

AD- 856 794

## INVERTERS

Coolant Pump Power Inverter -  
Breadboard Evaluation Testing.\*

AD- 856 665

## LAUNCH VEHICLES

Program Titan IIIM Standard  
Space Launch Vehicle Component  
Development Report for the Titan  
IIIM Stage I Combustion Chamber.\*

AD- 860 050

## LIFE SUPPORT

Operation and Service Manual for  
6000 PSIG Oxygen Supply Cart  
58E181231.\*

AD- 856 776

Operation and Service Manual for  
Spacecraft Leakage Tester

52E180027.\*

AD- 853 778

Operation and Service Manual for  
Dual Gas Flow Control Panel  
58E181228.\*

AD- 856 784

## LIQUID PROPELLANT ROCKET ENGINES

Operation and Service Manual for  
Propulsion Components EFC Console  
52E420010.\*

AD- 857 147

Effects and Control of  
Contamination from a Scaled MDL  
attitude Control Thruster in a  
Tangential Orientation.\*

AD- 860 371

## LIQUID ROCKET PROPELLANTS

Operation and Service Manual for  
Fuel and Oxidizer Flush and Purge  
Units 52E420008, 52E420024.\*

AD- 857 158

## LOAD DISTRIBUTION

MOL Mass Properties Report 3.2:  
Verification Plan. Sequence Number  
B256. Data Item Number S-66.\*

AD- 856 523

Gemini B Mass Properties Report  
3.3 Operational Support Plan for  
Remote Site Phase.\*

AD- 856 816

## LOGISTICS

Mathematical model of supply  
support for space operations.

AD- 615 165

## MAGNETIC RECORDING SYSTEMS

Vibration Test of a 58A880025-1  
Tape Recorder.\*

AD- 856 537

Vibration Test of a 52-85713-339  
Tape Recorder. Volume 1.\*

AD- 856 543

Vibration Test of a 52-85713-339  
Tape Recorder. Volume II.\*

AD- 856 894

## MAINTAINABILITY

SUBJECT INDEX-32  
UNCLASSIFIED ZONOT

SPA-SPA

# UNCLASSIFIED

GE-AVE Maintainability Program  
Plan. CDRL Item No. R014. Data  
Item No. UR-417.\*  
AD- 857 017

MANAGEMENT PLANNING AND CONTROL  
Gemini B Orbiting Vehicle  
Effectiveness Assessment Plan  
Report.\*  
AD- 856 815

MANNED SPACECRAFT  
An article from the Russian  
periodical, Krylya Rodiny.  
AD- 430 239

MARS PROBES  
Mars-1 (Interplanetary station):  
Description of the interplanetary  
trajectory, instrumentation  
environmental conditions.  
AD- 601 509

METEORITES  
Simulated Meteoroid Impact  
Testing on a Composite Expandable  
Structure for Spacecraft Airlock  
Application.\*  
AD- 850 512

NAVIGATION  
Preliminary Gemini B Guidance  
Equations for the MDL Mission.\*  
AD- 856 690

NAVIGATION COMPUTERS  
MDL Baseline Requirements for  
Central, Test, and Reentry Modules  
of the Gemini B Computer Program.  
Volume III. MDL Baseline Equations  
Document. Part III. Data Item  
Number UC-228: Reentry Module  
Requirements.\*  
AD- 856 741

MDL Baseline Requirements for  
Central, Test, and Reentry Modules  
of the Gemini B Computer Program.  
Volume III. MDL Baseline Equations  
Document. Part I. Data Item  
Number UC-228: System  
Requirements. Central Module

Requirements.\*  
AD- 856 771

MDL Baseline Requirements for  
Central, Test, and Reentry Modules  
of the Gemini B Computer Program.  
Volume III. MDL Baseline Equations  
Document. Part II. Data Item  
Number UC-228: Test Module  
Requirements.\*  
AD- 856 772

Operation and Service Manual for  
Computer Data Display System  
58E270803.\*  
AD- 857 149

Operation and Service Manual for  
ACPU System Tester 52E270086.\*  
AD- 857 157

Operation and Service Manual for  
Computer System Test Console  
52E270003. Volume 2.\*  
AD- 857 165

Operation and Service Manual for  
Computer EFC Test Console  
52E270023. Volume II.\*  
AD- 857 166

NOZZLE GAS FLOW  
MDL Fluid Dynamics Preliminary  
Data Report: Thrustor Plume Tests.  
Sequence Number B319. Item Data  
Number UT-132.\*  
AD- 856 737

OPERATIONAL READINESS  
Gemini B Flight Effectiveness  
Model Report.\*  
AD- 856 817

MDL Ground Test Plan, Acceptance  
Test Plan. Volume I. Ave  
Components through Subsystems and  
Age CEI's Sequence Number B287.  
Data Item Number UT-101.\*  
AD- 856 841

PANEL BOARDS (ELECTRICITY)  
Vibration Test of 58T030051-1  
Gemini B Adapter Relay Panel  
Assembly.\*  
AD- 856 677

PARACHUTES

Static Test of Recovery  
Parachute Aft Bridle Fitting and  
Support Structure.\*  
AD- 856 888

PAYLOAD  
Contract End Item Design  
Performance/Verification. Test  
Procedures for MDL Computer  
Integrated Test Equipment for  
Mission Payload System Segment (MDL-  
CITE-MPSS) CDRL Item No. T-050 Data  
Item No. UT-451.\*  
AD- 859 092  
Checkout System Requirements  
CITE 400 A.\*  
AD- 859 096

PHOTOGRAPHIC LIGHTING SYSTEMS  
Vibration Test of the 52-88115-  
21 Light Assembly. Photographic.\*  
AD- 856 675

PNEUMATIC DEVICES  
Operation and Service Manual for  
Nitrogen and Helium Pressurization  
Units 52E420013, 52E420014.\*  
AD- 856 803

POWER SUPPLIES  
Operation and Service Manual for  
Uniblical Cable Tester 52E200004.\*  
AD- 857 159

PRESSURE  
MDL Rigid Body Fluctuating  
Pressure Test (IAL2). Volume I.  
Sequence Number B329. MDL Data  
Item UT-134.\*  
AD- 856 743

PRESSURE GAGES  
Vibration Qualification Test of  
Shock Mounted 52-88722-5 Low Range  
Pressure Transducer Gemini B-G80.\*  
AD- 856 880

PRESSURE SUITS  
Reverse Pressure Effect on Suit  
Demand Regulator.\*  
AD- 856 673

SUBJECT INDEX-33  
UNCLASSIFIED Z0407

SPA-SPA

# UNCLASSIFIED

## QUALITY CONTROL

Quality Assurance Plan for CRDL  
Item No. R015. Data Item No. UR-418.\*  
AD- 859 098

## REENTRY VEHICLES

Torque Versus Preload. Gemini B  
RV/Adapter Tie Strap.\*  
AD- 856 668

Operation and Service Manual for  
Re-Entry Module Instrumentation  
Simulator 52E440041.\*  
AD- 856 807

Gemini B Orbital Storage Test of  
Reentry Control System Engine  
Prope lant Valves.\*  
AD- 856 882

Ultimate Internal and External  
Pressure Tests of the Reentry  
Module Structure (Pressure Test of  
Static Reentry Module I). Volume  
I.\*  
AD- 856 889

Gemini B Re-Entry Module/Adapter  
Attachment Fairing Aerodynamic  
Heating and Pressure Tests in the  
McDonnell Hypervelocity Impulse  
Tunnel - Series I.\*  
AD- 856 900

Gemini B Re-Entry Module/Adapter  
Attachment Fairing Aerodynamic  
Heating and Pressure Tests in the  
McDonnell Hypervelocity Impulse  
Tunnel - Series I.\*  
AD- 856 901

## RELIABILITY

Gemini B Effectiveness  
Assessment Plan.\*  
AD- 856 753

## RETRO ROCKETS

Operation and Service Manual for  
Rocket Pressure Test Kit  
52E400002.\*  
AD- 856 797

## REVIEWS

people and space--Translation.  
AD- 683 158

MOL Effectiveness Program Status  
Report. Fourth Quarter 1966.  
Sequence Number B428. Data Item  
No. UR-116.\*  
AD- 857 161

MOL Effectiveness Program Status  
Report. First Quarter 1969.  
Sequence Number B428. Data Item  
No. UR-116.\*  
AD- 857 162

## SAFETY

Gemini B Safety Program Status  
Report.\*  
AD- 856 819

## SAFETY BELTS

MOL Zero G Development Test  
Report. DAC Line Item 1AJ32.  
Sequence Number B300.\*  
AD- 856 544

## SATELLITE ANTENNAS

G. B. Q. Antenna Tests.\*  
AD- 856 541  
Gemini B Antenna System  
Testing.\*  
AD- 856 849  
G.B.Q. Antenna Tests.\*  
AD- 856 876

## SHAPED CHARGES

Development Test of Z100 FLSC  
cutter Assembly with Dual Titanium  
Straps.\*  
AD- 856 553

## SHIELDING

Radiation protection for manned  
orbiting space stations.  
AD- 615 665  
Gemini B Blast Shield:  
mechanical Properties of Aluminum  
Flexcore.\*  
AD- 856 573  
Tension and Shear Strength of  
Inserts in the Gemini B Blast  
Shield.\*  
AD- 856 669

## SIMULATION

SUBJECT INDEX-34  
UNCLASSIFIED Z0M07

Item Test Plan (Computer  
Program) Gemini B Procedures  
Simulator. Sequence Number 29T.  
Data Item U-T-216.\*  
AD- 856 898

## SIMULATORS

Gemini B Procedures Simulator.  
Performance/Design Requirements.\*  
AD- 856 820  
Category I Test Plan Gemini B  
Procedures Simulator.\*  
AD- 856 899

SOLID PROPELLANT ROCKET ENGINES  
Subscale Rocket Impingement -  
Blast Shield and Laboratory Tunnel  
Specimen.\*  
AD- 856 881

## SPACE CREWS

GEMINI-B Pre-Ignition  
Effectiveness Model Report.\*  
AD- 856 740

## SPACE ENVIRONMENTS

Space observations: Science  
pushes back its horizons--  
Translation.  
AD- 702 322

## SPACE PROPULSION

Scientific results from the  
flight of Yantan automatic  
ionospheric laboratories. Part II--  
Translation.  
AD- 704 045

## SPACECRAFT COMPONENTS

MOL Ground Test Plan:  
development Test Plan. Sequence  
Number B285. MOL Data item Number  
UT-101.\*  
AD- 856 521

MOL Ground Test Plan:  
effectiveness Test Plan. Sequence  
Number B288. Data Item Number UT-  
004.\*  
AD- 856 536

## STABILITY

SPA-SPA

# UNCLASSIFIED

Effect of elasticity on the stability of manned rotating space stations.  
AD- 602 486

Experimental investigation of the effects of elasticity on the stability of manned rotating space stations.  
AD- 620 866

Reprint: Instability of spinning space stations due to crew motion.  
AD- 621 861

STABILIZATION SYSTEMS  
The synthesis of a system for optimal stabilization of a space station--Translation.  
AD- 679 660

STABILIZED PLATFORMS  
Operation and Service Manual for Inertial Platform Test Console 52E270020.\*  
AD- 856 792

Operation and Service Manual for IMU EFC Test Console 52E270032.\*  
AD- 857 141

Operation and Service Manual for IMU Pressurization Kit 52E270010.\*  
AD- 857 167

Operation and Service Manual for IMU Auxiliary Age Platform Alignment Mount Reference 52E270006, IMU Test Point Panel 52E270008, Three-Axis Platform Dolly 52E270036, IMU Test Cable Set 52E270053.\*  
AD- 857 174

STIFFENED CYLINDERS  
Buckling Analysis of Shuttle Disposable Liquid Hydrogen Tank with Floating Rings.\*  
AD- 743 508

STORAGE BATTERIES  
Operation and Service Manual for Spacecraft Battery Balancing Unit 52E230131.\*  
AD- 857 146

STRUCTURAL PROPERTIES  
Transient dynamic response of orbiting space stations.  
AD- 613 081

Reprint: Experimental investigation of the effects of elasticity on the stability of manned rotating space stations.  
AD- 638 705

Structural Specification Gemini B Spacecraft.\*  
AD- 856 517

Gemini B Structural Qualification Test Plan.\*  
AD- 856 750

TELEMETRY SYSTEMS  
Operation and Service Manual for T/M Remote Displays Power Supply Assembly 52E440052.\*  
AD- 856 808

Operation and Service Manual for Split Phase Converter 52E440049.\*  
AD- 856 809

Operation and Service Manual for Telemetry Control and Checkout Console 52E440063.\*  
AD- 856 810

Operation and Service Manual for PCM Telemetry Ground Station 52E440011.\*  
AD- 857 171

TEST METHODS  
MOL Item Test Plan (Computer Programs). Computer Program, Compiler, Manned Orbiting Laboratory, Test Oriented Language. Sequence Number B294.\*  
AD- 856 511

Gemini B Spacecraft Systems Test Plan.\*  
AD- 856 897

TEST SETS  
CITE Interfaces.\*  
AD- 859 093  
MOL-CITE Hardware/Software Interface Definition Document. Revision B.\*  
AD- 859 095

THERMOCOUPLES  
Operation and Service Manual for Thermocouple Checkout Box 52E440047.\*  
AD- 857 164

TIMING DEVICES  
Operation and Service Manual for Time Reference System EFC Console 52E270012.\*  
AD- 857 140

TRACKING  
Overall distance scale of the earth: Determination by using high-altitude satellites.  
AD- 622 479

TRANSPOUCERS  
Operation and Service Manual for Radiometer 52E440036.\*  
AD- 857 152

TRANSFER TRAJECTORIES  
Description of Retrograde Time Predict and Orbit Navigation Simulation Program (KAK2) Gemini B.\*  
AD- 857 031

TRANSMITTER RECEIVERS  
Operation and Service Manual for HF and Audio EFC Test Bench 52E19001.\*  
AD- 857 145

TRANSPORTATION  
Operation and Service Manual for Spacecraft Transportation Trailers 52E010016.\*  
AD- 856 767

Age CEI Design/Performance Verification Test Plan for CEI No. MOL 104A. Transporter - Mission Module for the Manned Orbiting Laboratory (MOL) System. CDRL Item No. T014/UT-454.\*  
AD- 857 026

Procedural Support Data MOL Mission Module Transporter.\*  
AD- 859 125

SUBJECT INDEX-35  
UNCLASSIFIED ZOM07

SPA-SPA

# UNCLASSIFIED

<p><b>VENUS PROBES</b> Translation of Russian articles: Flight of automatic interplanetary stations 'Venus-2' and 'Venus-3'. AD- 634 931</p> <p><b>WASTES(SANITARY ENGINEERING)</b> Experimental Investigation of Venting Water into a Vacuum.* AD- 893 928</p> <p><b>WEIGHTLESSNESS</b> MQL Zero G Development Test Report. DD Form 1423 Data Item UT- (110).* AD- 856 542</p> <p><b>*SPACE TECHNOLOGY</b> Five Year Plan for Space Test Program.* AD-A065 866</p> <p><b>*SPACE TRANSPORTATION</b> Department of Defense Space Transportation System Mission Operations Systems Definition Mission Assessment Report: Operations Design Mission A.* AD-A018 215 DOD/STS Mission Operations Systems Definition Mission Assessment Report: Operations Design Mission B.* AD-A019 274 Centaur Interim Upper Stage (IUS) System Study. Volume I. Executive Summary.* AD-A021 401 Centaur Interim Upper Stage (IUS) System Study. Volume II. Technical.* AD-A021 415 Delta Interim Upper Stage System Study. Volume I. Executive Summary.* AD-A021 416 Delta Interim Upper Stage System Study. Volume II. Technical Report.* AD-A021 417</p> <p><b>*SPACECRAFT</b> Management of DOD Space Payload Integration in the Space Shuttle Era.* AD-A026 384</p> <p><b>HUMAN FACTORS ENGINEERING</b> Forecast of Human Factors Technology Issues and Requirements for Advanced Aero-Hydro-Space Systems.* AD- 721 713</p> <p><b>MAINTAINABILITY</b> Translation of Russian article on the colonization of outer space. " 65-1 AD- 615 230</p> <p><b>RENDEZVOUS GUIDANCE</b> Theoretical method for precision rendezvous spacecraft station- keeping. AD- 612 048</p> <p><b>REVIEWS</b> FOREIGN SCIENCE BULLETIN, VOLUME SUBJECT INDEX-36 ZOMQ7</p>	<p>AD-A064 766 Standard Test Rack Exploitation Study.* AD-A064 773</p> <p><b>*SPACE TUGS</b> Centaur Interim Upper Stage (IUS) System Study. Volume I. Executive Summary.* AD-A021 401 Centaur Interim Upper Stage (IUS) System Study. Volume II. Technical.* AD-A021 415 Delta Interim Upper Stage System Study. Volume I. Executive Summary.* AD-A021 416 Delta Interim Upper Stage System Study. Volume II. Technical Report.* AD-A021 417</p> <p><b>*SPACECRAFT</b> Management of DOD Space Payload Integration in the Space Shuttle Era.* AD-A026 384</p> <p><b>HUMAN FACTORS ENGINEERING</b> Forecast of Human Factors Technology Issues and Requirements for Advanced Aero-Hydro-Space Systems.* AD- 721 713</p> <p><b>MAINTAINABILITY</b> Translation of Russian article on the colonization of outer space. " 65-1 AD- 615 230</p> <p><b>RENDEZVOUS GUIDANCE</b> Theoretical method for precision rendezvous spacecraft station- keeping. AD- 612 048</p> <p><b>REVIEWS</b> FOREIGN SCIENCE BULLETIN, VOLUME SUBJECT INDEX-36 ZOMQ7</p>	<p>5, NUMBER 4, APRIL 1969.* AD- 687 326</p> <p><b>USSR</b> Translation of the 1963 Russian publication on space stations and artificial satellites. AD- 631 585</p> <p><b>*SPACECRAFT CABINS</b> FAILURE(MECHANICS) Ultimate Internal and External Pressure Tests of the Reentry Module Structure (Pressure Test of Static Reentry Module I). Volume I.* AD- 856 889</p> <p><b>*SPACECRAFT COMPONENTS</b> CHECKOUT EQUIPMENT Operation and Service Manual for ECS EFC Low Pressure Bench S2E180010.* AD- 856 775</p> <p><b>ENVIRONMENTAL TESTS</b> MQL Ground Test Plan: development Test Plan. Sequence Number B285. MQL Data Item Number UT-101.* AD- 856 521 MQL Ground Test Plan: effectiveness Test Plan. Sequence Number B288. Data Item Number UT- 004.* AD- 856 536</p> <p><b>*SPODUMENE</b> POROUS MATERIALS Development of Beta-Spodumene Closed Pore Insulation (CPI).* AD- 729 882</p> <p><b>*STABILIZED PLATFORMS</b> CHECKOUT EQUIPMENT Operation and Service Manual for IMU Auxiliary Age Platform Alignment Mount Reference S2E270006, IMU Test Point Panel S2E270008, Three-Axis Platform Dolly S2E270036, IMU Test Cable Set</p>
---	--	---

SPA-STA

# UNCLASSIFIED

52E270053.\*  
AD- 857 174

## CHECKOUT PROCEDURES

Operation and Service Manual for  
Inertial Platform Test Console  
52E270020.\*  
AD- 856 792

## PRESSURIZATION

Operation and Service Manual for  
IMU Pressurization Kit 52E270010.\*  
AD- 857 167

## \*STATIC STABILITY

Viscous Effects on the Static  
Stability and Axial-Force  
Characteristics of the NASA Space  
Shuttle Orbiter at Mach Number 19.\*  
AD-A018 143

## \*STATIONKEEPING

Station Keeping of the Space  
Shuttle in the Vicinity of a  
Deployed Payload.\*  
AD-A056 109

## \*STRESS ANALYSIS

Standard Test Rack. Concept  
Definition Study. Structural  
Analysis Report.\*  
AD-A066 247

## \*STRUCTURAL ANALYSIS

Standard Test Rack. Concept  
Definition Study. Structural  
Analysis Report.\*  
AD-A066 247

## \*STRUCTURAL RESPONSE

Space Shuttle Response to  
Acoustic Combustion Instability in  
the solid Rocket Boosters.\*  
AD-A037 157

## \*SUPERSONIC AIRCRAFT

The Mark IV Supersonic-  
Hypersonic Arbitrary-Body Program.  
Volume I. User's Manual.\*  
AD- 778 443

The Mark IV Supersonic-

Hypersonic Arbitrary-Body Program.  
Volume II. Program Formulation.\*  
AD- 778 444

The Mark IV Supersonic-

Hypersonic Arbitrary-Body Program.  
Volume III. Program Listings.\*  
AD- 778 445

## HUMAN FACTORS ENGINEERING

Forecast of Human Factors  
Technology Issues and Requirements  
for Advanced Aero-Hydro-Space  
Systems.\*  
AD- 721 713

## \*SUPERSONIC CHARACTERISTICS

Pitch-, Yaw-, and Roll-Damping  
Characteristics of a Shuttle  
Orbiter at M = 8.\*  
AD-A011 648

## \*SUPERSONIC TRANSPORTS

Annual Report of the Lawrence  
Livermore Laboratory to the FAA on  
the High Altitude Pollution Program-  
1978.\*  
AD-A069 127

## \*SYMPOSIA

Recent Advances in Aeronautical  
and Space Medicine.\*  
AD-A078 360

## \*SYNCHRONOUS SATELLITES

Department of Defense Space  
Transportation System (DOD/STS)  
Mission Operations Systems  
Definition Mission Assessment  
Report: Operations Design Mission  
A.\*  
AD-A045 100

## SPACE STATIONS

OPTIMUM FEEDBACK CONTROL OF A  
SYNODIC SATELLITE.\*  
AD- 695 043

## \*TELEMETRY SYSTEMS

CONTROL PANELS  
Operation and Service Manual for  
Telemetry Control and Checkout

Console 52E440063.\*  
AD- 856 610

## PHASE CONTROL DEVICES

Operation and Service Manual for  
Split Phase Converter 52E440049.\*  
AD- 856 809

## POWER SUPPLIES

Operation and Service Manual for  
T/M Remote Displays Power Supply  
Assembly 52E440052.\*  
AD- 856 808

## TEST EQUIPMENT

Operation and Service Manual for  
PCM Telemetry Ground Station  
52E440011.\*  
AD- 857 171

## \*TEST EQUIPMENT

### COMPUTERS

Operation and Service Manual for  
Computer System Test Console  
52E270003. Volume I.\*  
AD- 856 791

## \*TEST FACILITIES

Standard Test Rack. Concept  
Definition Study. Structural  
Analysis Report.\*  
AD-A066 247

## DESIGN

On the Simulation of Plumes from  
High Pressure Hydrogen/Oxygen  
Rocket Engines.\*  
AD- 733 896

## \*TEST METHODS

Proceedings of the Biennial  
Guidance Test Symposium (9th) Held  
at Holloman Air Force Base, New  
Mexico on 10-12 October 1979.  
Volume I.\*  
AD-A076 567

## \*TEST SETS

RADAR BEACONS  
Operation and Service Manual for  
C and S Beacon EFC Test Bench

SUBJECT INDEX-37  
UNCLASSIFIED Z0407

STA-TES

# UNCLASSIFIED

52E190003.\*  
AD- 856 801

\*TEST STANDS  
Standard Test Rack Concept  
Definition Study, Manned Interface  
Definition.\*  
AD-A065 097

\*THERMAL INSULATION  
Aerothermal Tests of the Space  
Shuttle External Tank Insulating  
Material.\*  
AD-A017 497

SALT SPRAY TESTS  
Environmental Testing of Closed  
Pore Insulation (CPI). II. Salt  
Spray Testing.\*  
AD- 757 424

\*THERMOCOUPLES  
TEST EQUIPMENT  
Operation and Service Manual for  
Thermocouple Checkout Box  
52E440047.\*  
AD- 857 164

\*THERMOSTATS  
CHECKOUT EQUIPMENT  
RCS Propellant Tank Thermostat  
Test.\*  
AD- 856 896

\*TIMING DEVICES  
INSTRUCTION MANUALS  
Operation and Service Manual for  
Time Code Generator 52E440027 and  
Timing Distribution System  
52E440065.\*  
AD- 857 177

MONITORS  
Operation and Service Manual for

Time Reference System EFC Console  
52E270012.\*  
AD- 857 140

\*TRAILERS  
INSTRUCTION MANUALS  
Operation and Service Manual for  
Spacecraft Transportation Trailers  
52E010016.\*  
AD- 856 767

LIQUEFIED GASES  
Operation and Service Manual for  
LOX and LN2 Installation Kits  
52E1-0178.\*  
AD- 856 779

PERFORMANCE(ENGINEERING)  
Procedural Support Data MOL  
mission Module Transporter.\*  
AD- 859 125

SPECIFICATIONS  
Age CEI Design/Performance  
Verification Test Plan for CEI No.  
MOL 104A. Transporter - Mission  
Module for the Manned Orbiting  
Laboratory (MOL) System. CDRL Item  
No. T014/UT-454.\*  
AD- 857 026

\*TRAJECTORIES  
OPTIMIZATION  
Optimal Trajectories for the  
Flyback Shuttle.\*  
AD- 746 656

\*TRANSDUCERS  
CALIBRATION  
Operation and Service Manual for  
Ratiometer 52E440033.\*  
AD- 857 152

\*TRANSFER  
Optimal Three Burn Orbit  
Transfer.\*  
AD-A039 257

\*TRANSMITTER RECEIVERS  
TEST EQUIPMENT  
Operation and Service Manual for

HF and Audio EFC Test Bench  
52E19001.\*  
AD- 857 145

\*TURBULENT BOUNDARY LAYER  
AIRFOILS  
Numerical Calculation of the  
Subsonic and Transonic Turbulent  
Boundary Layer on an Infinite Yawed  
Airfoil.\*  
AD- 763 730

PRESSURE  
MOL Rigid Body Fluctuating  
Pressure Test (IAL2). Volume I.  
Sequence Number 3325. MOL Data  
Item UT-133.\*  
AD- 856 546

WIND TUNNEL MODELS  
Wall Temperature Effects on Two-  
and Three-Dimensional Transonic  
Turbulent Boundary Layers.\*  
AD- 767 900

\*UMBILICAL CORDS(AEROSPACE)  
DISCONNECT FITTINGS  
Structural and Functional Test  
of the Gemini B Adapter Ground  
Coolant Supply Umbilical  
Disconnect.\*  
AD- 856 570

\*UNDERWATER VEHICLES  
A Remote, Unmanned Dewatering  
System for Recovery of the Solid  
Rocket Booster of the Space Shuttle  
Program.\*  
AD-A063 077

HUMAN FACTORS ENGINEERING  
Forecast of Human Factors  
Technology Issues and Requirements  
for Advanced Aero-Hydro-Space  
Systems.\*  
AD- 721 713

\*USSR  
The Value of an Orbital Minute--  
Translation.  
AD-A018 534

SUBJECT INDEX-38  
UNCLASSIFIED Z0W07

TES-USS

UNCLASSIFIED

Salyut to be Supplied  
Automatically--Translation.  
AD-A018 540

\*VENUS PROBES  
SPACE STATIONS  
Translation of Russian articles:  
Flight of automatic interplanetary  
stations 'Venus-2' and 'Venus-3'.  
AD- 634 931

\*VERTICAL STABILIZERS  
Effects of Vertical Tail  
Flexibility on the Aerodynamic  
Characteristics of a 0.03-Scale  
NASA Space Shuttle Orbiter at Mach  
Numbers from 0.90 to 1.55.\*  
AD-A062 377

\*VISCIOUS FLOW  
Space Shuttle Windward  
Streamline Laminar Viscous Shock-  
Layer Flows at Angle of Attack--  
Comparison of Theory and  
Experiment.\*  
AD-A042 843

\*VISUAL PERCEPTION  
Reprint: Particle Induced  
Visual Phenomena in Space.  
AD-A053 213  
Reprint: Role of Nuclear Stars  
in the Light Flashes Observed on  
Skylab 4.  
AD-A053 214

\*WASTES (SANITARY ENGINEERING)  
AEROSPACE CRAFT  
Research on a waste system for  
aerospace stations.  
AD- 603 013

\*WASTES(SANITARY ENGINEERING)  
SPACE STATIONS  
Experimental Investigation of  
Venting Water into a Vacuum.\*  
AD- 893 928

\*WEIGHTLESSNESS  
Development of a Zero-G Gauging  
System. Volume I.\*

AD- 779 915

SAFETY BELTS  
MDL Zero G Development Test  
Report. DAC Line Item 1A432.  
Sequence Number B300.\*  
AD- 856 544

\*WIND TUNNEL MODELS  
Space Shuttle Windward  
Streamline Laminar Viscous Shock-  
Layer Flows at Angle of Attack--  
Comparison of Theory and  
Experiment.\*  
AD-A042 843

TURBULENT BOUNDARY LAYER  
Wall Temperature Effects on Two-  
and Three-Dimensional Transonic  
Turbulent Boundary Layers.\*  
AD- 767 900

\*WIND TUNNEL TESTS  
NASA/RI OA 208 and 209  
Verification Static-Stability and  
Control-Effectiveness Tests of the  
Space Shuttle Orbiter Vehicle at  
Mach Numbers from 2 to 8.\*  
AD-A057 080

Test Results from the  
NASA/Rockwell International Space  
Shuttle Integrated Vehicle Test (IH  
85) Conducted in the AEDC-VKF  
Tunnel A.\*  
AD-A058 141

\*WIND TUNNELS  
AERODYNAMICS  
Reprint: On Dynamic Stability  
Testing of Unconventional  
Configurations.  
AD- 721 971

SUBJECT INDEX-39  
UNCLASSIFIED ZOM07

VEN-WIN



## UNCLASSIFIED

## PERSONAL AUTHOR INDEX

- \*ADAMS, J. C., JR. \* \* \*  
Wall Temperature Effects on Two-  
and Three-Dimensional Transonic  
Turbulent Boundary Layers.  
AD- 767 900
- \* \* \*  
Real Gas Scale Effects on  
Hypersonic Laminar Boundary-Layer  
Parameters Including Effects of  
Entropy-Layer Swallowing.  
AD-A018 755
- \*ADAMS, JOHN C., JR. \* \* \*  
Numerical Calculation of the  
Subsonic and Transonic Turbulent  
Boundary Layer on an Infinite Yawed  
Airfoil.  
AD- 763 730
- \*ADAMS, P. A. \* \* \*  
On Dynamic Stability Testing of  
Unconventional Configurations,  
AD- 721 971
- \*ALLEN, THOMAS H. \* \* \*  
DISSOLVED NITROGEN AND BENDS IN  
OXYGEN/NITROGEN MIXTURES DURING  
EXERCISE AT DECREASED PRESSURES,  
AD- 620 625
- \*ANDERBERG, MICHAEL R. \* \* \*  
ELECTRICAL POWER SYSTEMS FOR THE  
MANNED ORBITING LABORATORY.  
AD- 624 668
- \*ANDREW, L. V. \* \* \*  
TRANSIENT DYNAMIC RESPONSE OF  
ORBITING SPACE STATIONS,  
AD- 613 081
- \*ARTSIMOVICH, L. A. \* \* \*  
SCIENTIFIC RESULTS FROM THE FLIGHT  
OF YANTAR AUTOMATIC IONOSPHERIC  
LABORATORIES. PART II,
- AD- 704 045
- \*ATHERTON, ROBERT R. \* \* \*  
Air Force Reusable Rocket Engine  
Program XLR129-P-1. Volume I.  
AD- 881 744
- \*BAKER, JAMES P. \* \* \*  
DOD Participation in the Shuttle  
Program a Management Analysis.  
AD-A027 552
- \*BAKER, K. L. \* \* \*  
Department of Defense Space  
Transportation System Mission -  
Computational Function Allocation.  
AD-A022 864
- \*BALDAU, W. J. \* \* \*  
Electromagnetic Compatibility  
Requirements MOL Systems Orbiting  
Vehicle.  
AD- 856 516
- \*BARNER, HOWARD A. \* \* \*  
Gemini B Procedures Simulator  
Initial Version Precision  
Qualification Test Procedure CEI  
58Y010A GPS Computer Program,  
AD- 856 847
- \*BAUER, R. J. \* \* \*  
Analysis of Crew Escape Initiation  
Response Characteristics Form Titan  
IIIM/Gemini B State 'O' Abort  
Simulation,
- AD- 856 902
- \*BEST, J. T., JR. \* \* \*  
NASA-Convain ACS Space Shuttle  
Study at Mach Number 8.0.  
AD- 759 578
- \*BETTS, J. T. \* \* \*  
Optimal Three Burn Orbit Transfer.  
AD-A039 257
- \*BLACK, J. A. \* \* \*  
Effects of Vertical Tail  
Flexibility on the Aerodynamic  
Characteristics of a 0.03-Scale  
NASA Space Shuttle Orbiter at Mach  
Numbers from 0.3J to 1.55.  
AD-A062 377
- \* \* \*  
Data Verification Tests of a 0.02-  
Scale NASA Space Shuttle Launch  
Vehicle at Mach Numbers from 0.60  
to 1.55.  
AD-A069 194
- \* \* \*  
Data Verification Tests of a 0.03-  
Scale NASA Space Shuttle Launch  
Vehicle at Mach Numbers from 0.60  
to 1.55.  
AD-A070 442
- \*BOND, V. P. \* \* \*  
Particle Induced Visual Phenomena  
in Space,  
AD-A053 213
- \*BOUDREAU, A. H. \* \* \*  
Pressure and Heat Transfer Tests on  
the NASA Space Shuttle External  
Tank at Mach Number 16.  
AD-A015 743
- \*BOYLAN, D. E. \* \* \*  
Heat-Transfer Tests on the Nose of  
the Shuttle Orbiter External Tank
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD- 767 900
- AD-A018 755
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 721 971
- AD- 620 625
- AD- 624 668
- AD- 613 081
- AD-A015 743
- AD- 856 902
- AD- 759 578
- AD-A039 257
- AD-A062 377
- AD-A069 194
- AD-A070 442
- AD-A053 213
- AD-A015 743
- AD-A018 755
- AD- 881 744
- AD-A027 552
- AD-A022 864
- AD- 856 516
- AD- 856 847
- AD- 856 902
- AD- 767 900
- AD- 763 730
- AD- 7

UNCLASSIFIED

<p>* * *</p> <p>Abort Separation, Longitudinal Force, and Moment Characteristics of McDonnell Douglas Booster and Orbiter Space Shuttle Vehicles at Mach Numbers 2.0 to 6.0.</p> <p>AD- 738 645</p> <p>*BUSBY, M. R. * * *</p> <p>Experimental Investigation of Venting Water into a Vacuum.</p> <p>AD- 893 928</p> <p>*BUSHEY, C. E. * * *</p> <p>Gemini B Interface Heat Exchanger Flow Distribution Test.</p> <p>AD- 856 890</p> <p>*CANTOR, MYRON A. * * *</p> <p>Space Test Program Standard Satellite Launch Optimization Study.</p> <p>AD-A018 177</p> <p>*CAKDEN, WILLIAM H. * * *</p> <p>Simulated Meteoroid Impact Testing on a Composite Expandable Structure for Spacecraft Airlock Application.</p> <p>AD- 850 512</p> <p>*CARTER, J. P. * * *</p> <p>Description of Retrograde Time Predict and Orbit Navigation Simulation Program (KAK2) Gemini B.</p> <p>AD- 857 031</p> <p>*CARTER, L. D. * * *</p> <p>Flow-Field Measurements in the Windward Surface Shock Layer of Space Shuttle Orbiter Configurations at Mach Number 8.</p> <p>AD-A012 875</p> <p>* * *</p> <p>Heat-Transfer Tests on the Rockwell International Space Shuttle Orbiter</p>	<p>with and without Simulated Protuberances.</p> <p>AD-A012 876</p> <p>*CARVER, D. B. * * *</p> <p>Heat-Transfer Tests on the Rockwell International Space Shuttle Orbiter with Boundary-Layer Trips (OH-54).</p> <p>AD-A024 553</p> <p>* * *</p> <p>Heat-Transfer Tests on the Nose of the Shuttle Orbiter External Tank (FH-15).</p> <p>AD-A058 693</p> <p>* * *</p> <p>Infrared and Phase-Change Paint Measurements of Heat-Transfer on the Space Shuttle Orbiter.</p> <p>AD-A059 796</p> <p>*CHICHOLOUSEK, L. D. * * *</p> <p>Gemini B Effectiveness Assessment Plan.</p> <p>AD- 856 753</p> <p>* * *</p> <p>Gemini B Flight Effectiveness Model Report.</p> <p>AD- 856 817</p> <p>*CIBRIAN, RAMIRO * * *</p> <p>Nonequilibrium Stagnation Region Aerodynamic Heating of Hypersonic Glide Vehicles.</p> <p>AD-A030 389</p> <p>*CONNELL, RODNEY ALAN * * *</p> <p>Maximum Payload, Four-Impulse, Non-Coplanar, Orbital Transfers for an Upper Stage Vehicle of the Space Transportation System.</p> <p>AD-A034 758</p> <p>*COOKE, JULIAN P. * * *</p> <p>Interruption of Denitrogenation by Air-Breathing.</p> <p>AD-A020 049</p>
---	--

PERSONAL AUTHOR INDEX-2  
UNCLASSIFIED Z0W07

BRA-C00

UNCLASSIFIED

*COWAN, JON M. * * *	Summary. AD-A021 416	Delta Interim Upper Stage System Study. Volume I. Executive Summary. AD-A021 416
Operation and Service Manual for IMU EFC Test Console 52E270032. AD- 857 141	Delta Interim Upper Stage System Study. Volume II. Technical Report. AD-A021 417	Delta Interim Upper Stage System Study. Volume II. Technical Report. AD-A021 417
Operation and Service Manual for DC-DC Converter EFC Console 52E440008, AD- 857 142	*DEGNER, EUGENE A. * * *	*DOLGICH, ALEKSANDER * * *
Operation and Service Manual for Guidance and Control EFC Recorder 52E270069, AD- 857 153	DISSOLVED NITROGEN AND BENDS IN OXYGEN/NITROGEN MIXTURES DURING EXERCISE AT DECREASED PRESSURES, AD- 620 625	SPACECRAFT UTILIZING THE LIFTING AND BALLISTIC REENTRY TECHNIQUES. PART I. SPACECRAFT MANEUVERING- AND DESCENT-SYSTEM HARDWARE: COMPILATION AND ANALYSIS OF EXTRACTS AND REVIEWS. AD- 647 646
Operation and Service Manual for Relay Panel EFC Console 52E230010, AD- 857 170	*DENILOV, YU. I. * * *	*DREYFUSS, D. J. * * *
*CROUZET-PASCAL, JACQUES * * *	SCIENTIFIC RESULTS FROM THE FLIGHT OF YANTAR AUTOMATIC IONOSPHERIC LABORATORIES. PART II, AD- 704 045	The Space Shuttle as an Element in the National Space Program. AD- 729 770
Buckling Analysis of Shuttle Disposable Liquid Hydrogen Tank with Floating Rings. AD- 743 508	*DIAMANT, L. S. * * *	*DWYER, WALTER J. * * *
*DANE, PAUL T. * * *	Department of Defense Space Transportation System Orbiter Avionics Software Integration Study. Analysis of Orbiter Systems to Meet MASE Requirements. AD-A070 634	Finite Element Modeling and Optimization of Aerospace Structures. AD- 754 915
Operation and Service Manual for Spacecraft Battery Charger 52E230075, AD- 857 176	*DIFRANCO, DANTE A. * * *	*DYER, RAY E. * * *
*DAVIS, LARRY * * *	Preliminary Handling Qualities Requirements for Lifting Re-Entry Vehicles during Terminal Flight. AD- 731 563	Extravehicular Activities System Effectiveness. Volume III Phase II Effectiveness Computer Model. AD- 847 482
Operation and Service Manual for Spacecraft Sequence Recorder 52E230003, AD- 856 802	*DOBROBRADOV, V. * * *	*EAVES, R. H., JR. * * *
*DAWBARN, R. * * *	ON THE WAY TO THE COSMOS. AD- 430 239	Heat-Transfer Investigation of Langley Research Center Delta Wing Configurations at Mach Numbers 8 and 10.5. AD- 755 355
Studies of the Exhaust Products from Solid Propellant Rocket Motors. AD-A029 569	*DODSON, JOHN * * *	Heat-Transfer and Flow-Field Tests of the McDonnell Douglas-Martin Marietta Space Shuttle
*DAWSON, R. P. * * *	RESEARCH ON A WASTE SYSTEM FOR AEROSPACE STATIONS. AD- 603 013	
Delta Interim Upper Stage System Study. Volume I. Executive	*DOIRON, R. C. * * *	

PERSONAL AUTHOR INDEX-3  
UNCLASSIFIED ZOWQ7

COW-EAV

# UNCLASSIFIED

Configurations. AD- 759 176	AD- 856 553	AD- 742 984
*EFREMOV, A. * * *	*FELDMAN, CARL * * *	*FREEMAN, RAOUL J. * * *
SPACE OBSERVATIONS: SCIENCE PUSHES BACK ITS HORIZONS. AD- 702 322	Environmental Testing of Closed Pore Insulation (CPI). II. Salt Spray Testing. AD- 757 424	A MATHEMATICAL MODEL OF SUPPLY SUPPORT FOR SPACE OPERATIONS. AD- 615 165
*ELIASON, D. W. * * *	*FEY, WAYNE A. * * *	*FRENCH, F. W. * * *
A THEORETICAL METHOD FOR PRECISION RENDEZVOUS STATION-KEEPING. AD- 612 048	Station Keeping of the Space Shuttle in the Vicinity of a Deployed Payload. AD-A056 109	VULNERABILITY OF MANNED ORBITAL COMMAND POSTS TO NATURAL SPACE RADIATIONS. AD- 609 501
*EMERSON, T. S. * * *	*FILZ, R. C. * * *	*FRUEH, FRANK J. * * *
MOL Rigid Body Fluctuating Pressure Test (1AL2). Volume II. Sequence Number 8329. Data Item Number UT- 134. AD- 856 554	Particle Induced Visual Phenomena in Space, AD-A053 213	THE EFFECT OF ELASTICITY ON THE STABILITY OF MANNED ROTATING SPACE STATIONS. AD- 602 486
MOL Rigid Body Fluctuating Pressure Test (1AL2). Volume I. Sequence Number 8329. MOL Data Item UT-134. AD- 856 743	Role of Nuclear Stars in the Light Flashes Observed on Skylab 4, AD-A053 214	EXPERIMENTAL INVESTIGATION OF THE EFFECTS OF ELASTICITY ON THE STABILITY OF MANNED ROTATING SPACE STATIONS. AD- 620 866
*ENGLE, WILLIAM P. * * *	*FINKE, REINALD G. * * *	*FUNG, Y. C. * * *
Standard Test Rack Exploitation Study. AD-A064 773	Comparison of Chemical and Nuclear Propulsion for Lunar and Cislunar Transportation Systems. AD- 731 963	INSTABILITY OF SPINNING SPACE STATIONS DUE TO CREW MOTION. AD- 621 861
*ERLEMAN, GERHARD * * *	*FINNEY, L. M. * * *	*GANGL, ERWIN C. * * *
SOVIET SPACE EXPLORATION AS VIEWED BY EAST GERMAN SPECIALISTS, AD- 624 575	BIOMEDICAL POTENTIAL OF A CENTRIFUGE IN AN ORBITING LABORATORY. AD- 472 550	Proceedings of the Multiplex Data Bus Conference Held at Baltimore Towers Hotel, Dayton, Ohio on 3-5 November 1976. AD-A033 793
*FARNSWORTH, CRAIG * * *	*FLECKENSTEIN, H. P. * * *	*GATTO, L. W. * * *
FLSC Cutter Assembly/Dual Titanium Straps Gap Test. AD- 856 883	Verification Test Plan for Environmental Control Unit CEI 109A. Data Item No. UT-454, AD- 859 127	SkyLab Imagery: Application Reservoir Management in New England. AD-A030 329
*FARNSWORTH, CRAIG W. * * *	*FORSLUND, GERALD M. * * *	*GEDEON, G. S. * * *
Development Test of Z100 FLSC Cutter Assembly with Dual Titanium Straps.	Chemical Orbit-to-Orbit Shuttle Task Summary.	

PERSONAL AUTHOR INDEX-4  
UNCLASSIFIED ZOM07

EFR-GED

UNCLASSIFIED

- Department of Defense Space Transportation System (DOD/STS) Mission Operations Systems Definition Mission Assessment Report: Operations Design Mission A.  
AD-A045 100
- \*GEN, LING FU \* \* \*  
Space Shuttle.  
AD-A066 278
- \*GENTRY, ARVEL E. \* \* \*  
The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume I. User's Manual.  
AD- 778 443
- \* \* \*  
The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume II. Program Formulation.  
AD- 778 444
- \* \* \*  
The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume III. Program Listings.  
AD- 778 445
- \*GESCHWIND, G. \* \* \*  
Environmental Testing of Closed Pore Insulation (CPI) I - ARC Jet Testing.  
AD- 756 204
- \*GOGERTY, DAVID C. \* \* \*  
A MATHEMATICAL MODEL OF SUPPLY SUPPORT FOR SPACE OPERATIONS.  
AD- 615 165
- \*GOODALL, RAY \* \* \*  
A STUDY OF AN ORBITAL MAINTENANCE AND MATERIAL TRANSFER SHUTTLE.  
AD- 438 517
- \*GOODHART, F. W. \* \* \*
- CERTRIFUGE IN AN ORBITING LABORATORY.  
AD- 472 550
- \*GRODZOVSKII, G. K. \* \* \*  
SCIENTIFIC RESULTS FROM THE FLIGHT OF YANTAR AUTOMATIC IONOSPHERIC LABORATORIES. PART II.  
AD- 704 045
- \*GROSS, MURRAY \* \* \*  
Standard Test Rack Concept Definition.  
AD-A065 097
- \*GUIER, W. H. \* \* \*  
NOTE ON DETERMINING THE OVERALL DISTANCE SCALE OF THE EARTH USING HIGH ALTITUDE SATELLITES.  
AD- 622 479
- \*HAEFNER, M. A. \* \* \*  
Test Plan for Aerodynamic Heating and Pressure Tests of a 9-Percent Gemini B Re-Entry Configuration Model in the McDonnell Hypervelocity Impulse Tunnel.  
AD- 856 749
- \*HANFF, E. S. \* \* \*  
Supersonic Dynamic Stability Experiments on the Space Shuttle.  
AD- 748 562
- \*HANSEN, K. F. \* \* \*  
VULNERABILITY OF MANNED ORBITAL COMMAND POSTS TO NATURAL SPACE RADIATIONS.  
AD- 609 501
- \*HARBISON, G. D. \* \* \*  
Gemini B Structural Qualification Test Plan.
- CDRL Acceptance Test Plan for Environmental Control Unit. Sequence Number T055. Data Item Number UT-455.  
AD- 857 013
- \*GOSCH, W. D. \* \* \*  
The Space Shuttle as an Element in the National Space Program.  
AD- 729 770
- \*GRAHAM, R. E. \* \* \*  
Data Verification Tests of a 0.03-Scale NASA Space Shuttle Launch Vehicle at Mach Numbers from 0.60 to 1.55.  
AD-A070 442
- \*GRAVES, GLENN W. \* \* \*  
A MATHEMATICAL MODEL OF SUPPLY SUPPORT FOR SPACE OPERATIONS.  
AD- 615 165
- \*GREGOIRE, J. E. \* \* \*  
Wind Tunnel Fluctuating Pressure Tests on a 10 Percent Scale Model of the Gemini B Spacecraft at Ames Unitary Plan Wind Tunnel.  
AD- 856 895
- \*GREGORY, LOWELL D. \* \* \*  
Extravehicular Activities System Effectiveness. Volume III Phase II Effectiveness Computer Model.  
AD- 847 482
- \*GRIFFIN, G. SCOTT \* \* \*  
Space Transportation System Western Launch Site Construction Management Information System - A Case Study.  
AD-A077 675
- \*GRIMES, R. H. \* \* \*  
BIOMEDICAL POTENTIAL OF A

PERSONAL AUTHOR INDEX-5  
UNCLASSIFIED ZOM07

GEN-HAR

UNCLASSIFIED

- AD- 856 750
- \*HARPER, D. C. \* \* \*  
Aerothermal Tests of the Space Shuttle External Tank Insulating Material.  
AD-A017 497
- \*HARRIS, R. D. \* \* \*  
Centaur Interim Upper Stage (IUS) System Study. Volume I. Executive Summary.  
AD-A021 401
- \* \* \*  
Centaur Interim Upper Stage (IUS) System Study. Volume II. Technical.  
AD-A021 415
- \*HAUGEN, R. K. \* \* \*  
Skylab Imagery: Application Reservoir Management in New England.  
AD-A030 329
- \*HAYDEN, W. L. \* \* \*  
Preliminary Gemini B Guidance Equations for the MOL Mission.  
AD- 856 690
- \*HEALD, D. A. \* \* \*  
Centaur Interim Upper Stage (IUS) System Study. Volume I. Executive Summary.  
AD-A021 401
- \* \* \*  
Centaur Interim Upper Stage (IUS) System Study. Volume II. Technical.  
AD-A021 415
- \*HEALD, DANIEL A. \* \* \*  
Orbit-to-Orbit Shuttle Propellant Integration and Handling Study.  
AD- 735 290
- \*HERSHAFT, A. \* \* \*  
Environmental Testing of Closed Pore Insulation (CPI) I - ARC Jet Testing.  
AD- 756 204
- \*HIGGINS, DAVID BARNETT \* \* \*  
Astronaut Manual EVA Guidance: An Operational Procedure.  
AD-A026 267
- \*HILL, DAVID W., JR \* \* \*  
Effects and Control of Contamination from a Scaled MOL attitude Control Thruster in a Tangential Orientation.  
AD- 860 371
- \* \* \*  
Effects and Control of Contamination from a Scaled MOL Translational Thruster in a Longitudinal Orientation.  
AD- 861 021
- \*HILLMAN, R. F. \* \* \*  
CDRL Acceptance Test Plan for Environmental Monitor Unit. Sequence Number T056. Data Item Number UT455.  
AD- 857 014
- \*HOFF, M. \* \* \*  
Environmental Testing of Closed Pore Insulation (CPI) I - ARC Jet Testing.  
AD- 756 204
- \*HOFFMAN, THOMAS L. \* \* \*  
PRE-PHASE I FOR DESIGN, FABRICATION, AND ORBITAL TESTING OF A SPACE STRUCTURE.  
AD- 815 716
- \*HOLTZ, RONALD L. \* \* \*  
PERSONAL AUTHOR INDEX-6  
UNCLASSIFIED  
Z0N07
- Interface Heat Exchanger  
Interstitial Material Element Test.  
Heat Transfer.  
AD- 856 667
- \*HOPKINS, HAROLD \* \* \*  
On the Simulation of Plumes from High Pressure Hydrogen/Oxygen Rocket Engines.  
AD- 733 896
- \*HOSE, RICHARD L. \* \* \*  
Applications Study of Expandable Space Structures.  
AD- 879 707
- \*HUBE, F. K. \* \* \*  
Simulated Thermal Protection Tile Roughness Effects on Windward Surface Heat Transfer on the Pockwell International Space Shuttle Orbiter.  
AD-A034 733
- \*HUDSON, RONALD \* \* \*  
Impact of Space Shuttle Support Facilities Construction on Special Interest Plant Species (Vandenberg AFB, CA).  
AD-A049 177
- \*HURLEY, CHARLES J. \* \* \*  
Skylab D024 Thermal Control Coatings and Polymeric Films Experiment.  
AD-A046 208
- \* \* \*  
Results of the Polymeric Films Skylab D024 Experiment.  
AD-A046 210
- \*IEVALTS, JOHN O. \* \* \*  
Aerothermal Evaluation of the Space Shuttle Solid Rocket Booster and Solid Rocket Motor Thermal

HAR-IEV

# UNCLASSIFIED

Protection System.  
AD-A070 444

\*IMELS, KENNETH G. \* \* \*  
DISSOLVED NITROGEN AND BENDS IN  
OXYGEN/NITROGEN MIXTURES DURING  
EXERCISE AT DECREASED PRESSURES,  
AD- 620 625

\*IVENGAR, S. \* \* \*  
Example of Dynamic Interference  
Effects between Two Oscillating  
Vehicles,  
AD- 772 888

\*JENKE, LEROY M. \* \* \*  
Pitch-, Yaw-, and Roll-Damping  
Characteristics of a Shuttle  
Orbiter at M = 8.  
AD-A011 648

\*JENKINS, R. \* \* \*  
Environmental Testing of Closed  
Pore Insulation (CPI) I - ARC Jet  
Testing.  
AD- 756 204

\*JENSEN, F. R. \* \* \*  
Space Shuttle Response to Acoustic  
Combustion Instability in the Solid  
Rocket Boosters.  
AD-A037 157

\*JOHNSON, RAYMOND P. \* \* \*  
Time-Optimal Rendezvous for an  
Upper Stage Vehicle of the Space  
Transportation System.  
AD-A019 328

\*JORDAN, J. L. \* \* \*  
NASA/RI OA 208 and 209 Verification  
Static-Stability and Control-  
Effectiveness Tests of the Space  
Shuttle Orbiter Vehicle at Mach

Numbers from 2 to 8.  
AD-A057 080

\*JORDAN, T. M. \* \* \*  
RADIATION PROTECTION FOR MANNED  
ORBITING SPACE STATIONS,  
AD- 615 665

\*JURICH, LEO \* \* \*  
Applications Study of Expandable  
Space Structures.  
AD- 879 707

\*KAMRATH, P. C. \* \* \*  
TRANSIENT DYNAMIC RESPONSE OF  
ORBITING SPACE STATIONS,  
AD- 613 081

\*KAUL, G. E. \* \* \*  
Heat-Transfer Tests on the Rockwell  
International Space Shuttle Orbiter  
with and without Simulated  
Protuberances.  
AD-A012 876

\*KAYE, SAM \* \* \*  
Orbit-to-Orbit Shuttle Propellant  
Integration and Handling Study.  
AD- 735 290

\*KINSLOW, M. \* \* \*  
Studies of the Exhaust Products  
from Solid Propellant Rocket  
Motors.  
AD-A029 569

\*KNAUSS, R. G. \* \* \*  
Five Year Plan for Space Test  
Program.  
AD-A065 866

\*KNOX, E. C. \* \* \*  
Heat Transfer Test on the

NASA/Rockwell International Space  
Shuttle Orbiter at Mach number 6.0  
in AEDC/VKF Tunnel B.  
AD-A059 497

\*KONOPKA, WAYNE \* \* \*  
On the Simulation of Plumes from  
High Pressure Hydrogen/Oxygen  
Rocket Engines.  
AD- 733 896

\*KOPROWSKI, E. F. \* \* \*  
RADIATION PROTECTION FOR MANNED  
ORBITING SPACE STATIONS,  
AD- 615 665

\*KRAEMER, J. W. \* \* \*  
Program Description for Digital Six-  
Degree-of-Freedom Reentry  
Simulation. Gemini B.  
AD- 857 030

\*KRAVTSOV, N. F. \* \* \*  
SCIENTIFIC RESULTS FROM THE FLIGHT  
OF YANTAR AUTOMATIC IDIOSPHERIC  
LABORATORIES. PART II.  
AD- 704 045

\*LABERGE, J. G. \* \* \*  
On Dynamic Stability Testing of  
Unconventional Configurations.  
AD- 721 971

\* \* \*  
Supersonic Dynamic Stability  
Experiments on the Space Shuttle.  
AD- 748 562

\*LAMIRAND, J. B. \* \* \*  
Immersion Testing of Teflon  
Bundles.  
AD- 856 545

\* \* \*  
Massive Overloads on Teflon,  
Kapton, and Kynar Insulated Wire in  
an Oxygen Atmosphere.

PERSONAL AUTHOR INDEX-7  
UNCLASSIFIED ZOMD7

IKE-LAM

# UNCLASSIFIED

AD- 856 654	*** Massive Overload of Kynar (5M974 and 5M975) Insulated Wire in Air. AD- 856 655	*** The Space Shuttle as an Element in the National Space Program. AD- 729 770	and Audio EFC Test Bench 52E19001. AD- 857 145
*LANDHOLT, L.	*** Dissection of Hatch Actuator Breech Cartridge, P/N A218-10 (15-1006). AD- 856 651	*LEWIS, CLARK H.	Operation and Service Manual for Standard Temperature Monitor System 52E440044 and Harness Assembly 52E440033. AD- 857 168
*LANGLEY, R. W.	*** RADIATION PROTECTION FOR MANNED ORBITING SPACE STATIONS. AD- 615 665	*LEXOTSKY, F.	*LONG, DONALD W.
*LAUCK, ROBERT E.	*** Major Range Acquisitions for the Space Shuttle/Satellite Control Satellite Era. AD-A038 670	*** Wiring Harness Specification. AD- 856 693	Operation and Service Manual for Spacecraft Command System Checkout and Monitor 58E190513. AD- 856 777
*LEHN, WILLIAM L.	*** Skylab D024 Thermal Control Coatings and Polymeric Films Experiment. AD-A046 208	*LIBBY, W. F.	Operation and Service Manual for Inertial Platform Test Console 52E270020. AD- 856 792
*LENG, JARVIS	*** Results of the Polymeric Films Skylab D024 Experiment. AD-A046 210	*LING, FU-KENG	Operation and Service Manual for Hand Controller Tester Kit 52E270049. AD- 856 795
*LETOV, A. M.	*** On the Simulation of Plumes from High Pressure Hydrogen/Oxygen Rocket Engines. AD- 733 896	*LINQUITI, A. A.	*LUSCHER, WERNER P.
*LEVENSON, G. S.	*** THE SYNTHESIS OF A SYSTEM FOR OPTIMAL STABILIZATION OF A SPACE STATION. AD- 679 660	*** Preliminary Gemini B Guidance Equations for the MOL Mission. AD- 856 690	Orbit-to-Orbit Shuttle Engine Design Study. Book 1. Parametric Cycle Study. AD- 900 190
		*LOFLAND, M. L.	*LUTHER, FREDERICK M.
		*** MOL Fluid Dynamics Preliminary Data Report: Thruster Plume Tests. Sequence Number B319. Item Data Number UT-132. AD- 856 737	Annual Report of the Lawrence Livermore Laboratory to the FAA on the High Altitude Pollution Program-1978. AD-A069 127
		*LOH, M. M. H.	*LYAPUNOV, B.
		*** TRANSIENT DYNAMIC RESPONSE OF ORBITING SPACE STATIONS. AD- 613 081	*** COLONIZING OUTER SPACE. AD- 615 230
		*LONG, DONALD	*LYAPUNOV, B. V.
		*** Operation and Service Manual for HF	*** STATION OUTSIDE THE EARTH. AD- 631 585

PERSONAL AUTHOR INDEX-8  
UNCLASSIFIED ZOM07

LAN-LYA



\*MARCHAND, E. D.

Real Gas Scale Effects on Hypersonic Laminar Boundary-Layer Parameters Including Effects of Entropy-Layer Swallowing.  
-A018 755

†MARDIS, JAMES M.

Space Transportation System Western  
Launch Site Construction Management  
Information System - A Case Study.  
AD-A077 675

**\*MARTINDALE, W. R.**

**Heat-Transfer and Flow-Field Tests  
of the North American  
Rockwell/General Dynamics Convair  
Space Shuttle Configurations.  
— 755 354**

Heat-Transfer and Flow-Field Tests  
of the McDonnell Douglas-Martin  
Marietta Space Shuttle  
Configurations.  
AD- 759 176

Heat-Transfer Tests of Two Space Shuttle Orbiter Configurations at Mach Number 8.

Flow-Field Measurements in the  
Windward Surface Shock Layer of  
Space Shuttle Orbiter  
Configurations at Mach Number 8.  
AD-A012 875

**Real Gas Scale Effects on Hypersonic Laminar Boundary-Layer Parameters Including Effects of Entropy-Layer Swallowing.**  
AD-A018 755

Heat-Transfer Tests of a 0.0175-Scale Model of the Space Shuttle at Mach Numbers 2.5, 3.5, 4.5, and 5.5.

\*\*\*

**Roughness and Wall Temperature  
Effects on Boundary-Layer  
Transition on a 0.0175-Scale Space  
Shuttle Orbiter Model Tested at  
Mach Number 8.  
AD-A038 895**

\*MATTHEWS, R. K.

**Heat-Transfer and Flow-Field Tests  
of the North American  
Rockwell/General Dynamics Convair  
Space Shuttle Configurations.  
AD- 755 354**

\*  
\*  
\*

Heat-Transfer Investigation of  
Langley Research Center Delta Wing  
Configurations at Mach Numbers 8  
and 10.5.  
AD- 755 355

AD- 755 355

Heat-Transfer and Flow-Field Tests  
of the McDonnell Douglas-Martin  
Marietta Space Shuttle  
Configurations.  
AD- 759 176

\* \* \*

Aerothermal Tests of the Space  
Shuttle External Tank Insulating  
Material.

AD-A017 497

**\*MAYNE, A. W., JR.**

Wall Temperature Effects on Two-  
and Three-Dimensional Transonic  
Turbulent Boundary Layers.  
AD- 767 900

\*  
\*  
\*

Real Gas Scale Effects on  
Hypersonic Laminar Boundary-Layer  
Parameters Including Effects of  
Entropy-Layer Swallowing.  
AD-A018 755

100

**\*MCCAULEY, D. E.**

Gemini B Ejection Seat Functional  
Test Air Drop Test Plan,  
AD- 856 746

\*MCDIVE, R. P.

EMI Test of Gemini B Limit  
Switches.  
AD- 856 569

**\*MCELVAIN, M.**

Operation and Service Manual for  
Sequence Control and Monitor  
Console 52E230012 and Electronic  
Timer Control Panel 52E270048,  
AD- 856 787

Operation and Service Manual for  
Spacecraft Instrumentation System  
Test Set 52E440010,  
AD- 856 806

Operation and Service Manual for  
Sequential System Control and  
Monitor 52230004,  
AD- 857 144

AD- 857 144

Operation and Service Manual for  
Attitude Indicator EFC Console  
52E270035,  
AD- 857 154

\*MCKEE, E. D.

Gemini B Antenna System Testing.  
AD- 856 849

**G.B.Q. Antenna Tests.**

\*МСКИМ. Н. Л.

Skylab Imagery: Application  
Reservoir Management in New  
England.

\*MCNULTY, J. P.

Particle Induced Visual Phenomena  
in Space,  
AD-A053 213

\*MCNULTY, P. J.

PERSONAL AUTHOR INDEX-9  
UNCLASSIFIED ZOM07

MAR-MCN

# UNCLASSIFIED

\*MILLER, JACOB M. \* \* \*  
THE EFFECT OF ELASTICITY ON THE  
STABILITY OF MANNED ROTATING SPACE  
STATIONS.  
AD- 602 486

\* \* \*  
EXPERIMENTAL INVESTIGATION OF THE  
EFFECTS OF ELASTICITY ON THE  
STABILITY OF MANNED ROTATING SPACE  
STATIONS.  
AD- 620 866

\* \* \*  
EXPERIMENTAL INVESTIGATION OF THE  
EFFECTS OF ELASTICITY ON THE  
STABILITY OF MANNED ROTATING SPACE  
STATIONS.  
AD- 638 705

\*MITCHELL, JOHN F. \* \* \*  
Preliminary Handling Qualities  
Requirements for Lifting Re-Entry  
Vehicles during Terminal Flight.  
AD- 731 563

\*MOCKO, JOHN W. \* \* \*  
Maximum Payload Orbital Transfers  
for a Space Shuttle Solid-fuel  
Upper Stage Vehicle.  
AD-A034 947

\*MONGER, R. G. \* \* \*  
Delta Interim Upper Stage System  
Study. Volume I. Executive  
Summary.  
AD-A021 416

\* \* \*  
Delta Interim Upper Stage System  
Study. Volume II. Technical  
Report.  
AD-A021 417

\*MOONEY, R. W. \* \* \*  
Coolant Pump Power Inverter -  
Breadboard Evaluation Testing.  
AD- 856 665

\* \* \*  
Coolant Pump Power Inverter - Motor  
Running Characteristics.  
AD- 856 878

\*MOYER, H. GARDNER \* \* \*  
Optimal Trajectories for the  
Flyback Shuttle.  
AD- 746 656

\*MURRAY, ALVIN L. \* \* \*  
Space Shuttle Windward Streamline  
Laminar Viscous Shock-Layer Flows  
at Angle of Attack--Comparison of  
Theory and Experiment.  
AD-A042 843

\*MURRAY, RAYMOND H. \* \* \*  
Recent Advances in Aeronautical and  
Space Medicine.  
AD-A078 360

\*NARDO, C. T. \* \* \*  
Aerodynamic Characteristics of Two-  
Dimensional Waverider  
Configurations.  
AD- 765 285

\*NELSON, A. W. \* \* \*  
Centaur Interim Upper Stage (IUS)  
System Study. Volume I. Executive  
Summary.  
AD-A021 401

\* \* \*  
Centaur Interim Upper Stage (IUS)  
System Study. Volume II.  
Technical.  
AD-A021 415

\*NEUMANN, RICHARD D. \* \* \*  
Recent Notes and Data on  
Interference Heating.  
AD- 747 765

\*NICKS, ROBERT F. \* \* \*

MEI-NIC

\* \* \*  
Role of Nuclear Stars in the Light  
Flashes Observed on Skylab 4.  
AD-A053 214

\*MEIER, CRAIG A. \* \* \*  
Functional Tests on Two Gemini B  
Coolant Pump Assemblies.  
AD- 856 574

\* \* \*  
Torque vs Motor Input Current for  
Coolant Pump Motor. P/N 52-83700-  
403, S/N 123-111.  
AD- 856 652

\* \* \*  
Functional Tests on Two Coolant  
Pump Assemblies.  
AD- 856 879

\*MERRY, C. J. \* \* \*  
Skylab Imagery: Application  
Reservoir Management in New  
England.  
AD-A030 329

\*MEYER, HENRY \* \* \*  
Shuttle Impact on Communications  
Satellites as Seen from the User  
Viewpoint.  
AD-A061 036

\*MEYERS, J. F. \* \* \*  
Delta Interim Upper Stage System  
Study. Volume I. Executive  
Summary.  
AD-A021 416

\* \* \*  
Delta Interim Upper Stage System  
Study. Volume II. Technical  
Report.  
AD-A021 417

\*MIKHAILOV, V. \* \* \*  
SPACE OBSERVATIONS: SCIENCE PUSHES  
BACK ITS HORIZONS.  
AD- 702 322

PERSONAL AUTHOR INDEX-10  
UNCLASSIFIED ZOM07

UNCLASSIFIED

- Extravehicular Activities System Effectiveness. Volume I Phase II Summary Report.  
AD- 847 481 \* \* \*
- Extravehicular Activities System Effectiveness. Volume III Phase II Effectiveness Computer Model.  
AD- 847 482 \* \* \*
- \*NORD, W. J. \* \* \*  
Program Titan IIIM Standard Space Launch Vehicle Component Development Report for the Titan IIIM Stage I Combustion Chamber.  
AD- 860 050
- \*NOVAK, E. L. \* \* \*  
Vibration Test of the 52-88115-21 Light Assembly, Photographic.  
AD- 856 675
- \*NUTT, K. W. \* \* \*  
Heat-Transfer Tests of a 0.0175-Scale Model of the Space Shuttle at Mach Numbers 2.5, 3.5, 4.5, and 5.5.  
AD-A025 080
- \*NUTT, KENNETH W. \* \* \*  
Test Results from the NASA/Rockwell International Space Shuttle Integrated Vehicle Test (IH 85) Conducted in the AEDC-VKF Tunnel A.  
AD-A058 141
- \*NYBERG, J. W. \* \* \*  
BIOMEDICAL POTENTIAL OF A CENTRIFUGE IN AN ORBITING LABORATORY.  
AD- 472 550
- \*OLIVER, ROBERT C. \* \* \*  
Comparison of Chemical and Nuclear Propulsion for Lunar and Cis-lunar
- Transportation Systems.  
AD- 731 963
- \*OLIVER, WAYNE R. \* \* \*  
The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume I. User's Manual.  
AD- 778 443
- \* \* \*  
The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume II. Program Formulation.  
AD- 778 444
- \* \* \*  
The Mark IV Supersonic-Hypersonic Arbitrary-Body Program. Volume III. Program Listings.  
AD- 778 445
- \*OMAN, RICHARD \* \* \*  
On the Simulation of Plumes from High Pressure Hydrogen/Oxygen Rocket Engines.  
AD- 733 896
- \*ONG, R. S. B. \* \* \*  
Ionospheric Aerodynamics Related to Space Vehicles, Space Shuttles and Satellites.  
AD- 737 406
- \*ORLIK-RUCKEMANN, K. J. \* \* \*  
On Dynamic Stability Testing of Unconventional Configurations.  
AD- 721 971
- \* \* \*  
Supersonic Dynamic Stability Experiments on the Space Shuttle.  
AD- 748 562
- \*ORLIK-RUCKEMANN, K. J. \* \* \*  
Example of Dynamic Interference Effects between Two Oscillating Vehicles.  
AD- 772 888
- \*ORLIK-RUECKEMANN, K. J. \* \* \*  
Dynamic Stability Testing of Aircraft - Needs Versus Capabilities.  
AD- 773 160
- \*OWEN, J. R. \* \* \*  
Department of Defense Space Transportation System (DOD/STS) Mission Operations Systems Definition Mission Assessment Report: Operations Design Mission A.  
AD-A045 100
- \*PARKER, JAMES F., JR. \* \* \*  
Forecast of Human Factors Technology Issues and Requirements for Advanced Aero-Hydro-Space Systems.  
AD- 721 713
- \*PATTON, J. S. \* \* \*  
Current and Projected Government and Commercial Space Activities.  
AD-B004 682
- \*PAYNE, L. W. \* \* \*  
GEMINI-B Pre-Ignition Effectiveness Model Report.  
AD- 856 740
- \*PAYTON, P. H. \* \* \*  
Industrial Chemistry in Space.  
AD- 720 136
- \*PEASE, V. P. \* \* \*  
Particle Induced Visual Phenomena in Space.  
AD-A053 213
- \*PERSHING, BERNARD M. \* \* \*  
The Hypersonic Aerodynamic

PERSONAL AUTHOR INDEX-11  
UNCLASSIFIED ZOM07

NOR-PER

UNCLASSIFIED

Characteristics of the Gemini Re-Entry Module Based on a Statistical Analysis of Wind Tunnel Test Data, AD- 856 691

\*PETERS, C. F. \* \* \*

Centaur Interim Upper Stage (IUS) System Study. Volume I. Executive Summary. AD-A021 401

\* \* \*

Centaur Interim Upper Stage (IUS) System Study. Volume II. Technica. AD-A021 415

\*PETZOLD, MICHAEL F. \* \* \*

Operation and Service Manual for Ejection Seat Functional Test Fixture 52E040089, AD- 856 768

\* \* \*

Operation and Service Manual for Hatch Actuator Test Fixture 52E040094, AD- 856 769

\* \* \*

Operation and Service Manual for ECS EFC Low Pressure Bench 52E180010, AD- 856 775

\* \* \*

Operation and Service Manual for Rationmeter 52E440036, AD- 857 152

\* \* \*

Operation and Service Manual for Umbilical Cable Tester 52E200004, AD- 857 159

\*PFAFFE, H. \* \* \*

A Soviet Space Station Soon, AD- 860 583

\*PIERCE, COLE JON \* \* \*

A Mathematical Model for the Longitudinal Control System of the

Space Shuttle Orbiter. AD-A041 158

\*POKROVSKII, G. \* \* \*

PEOPLE AND SPACE, AD- 683 158

\*PRICE, HAROLD E. \* \* \*

Forecast of Human Factors Technology Issues and Requirements for Advanced Aero-Hydro-Space Systems. AD- 721 713

\*PRICE, HARRY J. \* \* \*

Operation and Service Manual for Time Reference System EFC Console 52E270012, AD- 857 140

\* \* \*

Operation and Service Manual for ACPU EFC Changer/Tester 52E270071, AD- 857 173

\* \* \*

Operation and Service Manual for IMU Auxiliary Age Platform Alignment Mount Reference 52E270006, IMU Test Point Panel 52E270008, Three-Axis Platform Dolly 52E270036, IMU Test Cable Set 52E270053, AD- 857 174

\*RAMIRAND, J. B. \* \* \*

Evaluation of Wire Characteristics for use on Gemini B. AD- 856 877

\*RANGER, ARTHUR A. \* \* \*

New Shock Tube Laboratory at Aachen, Germany, AD- 741 191

\*RESPINI, ELLEN M. \* \* \*

CLINICAL ASPECTS OF AEROSPACE

NURSING, AD- 623 967

\*REYNOLDS, H. \* \* \*

Operation and Service Manual for C and S Beacon EFC Test Bench 52E190003, AD- 856 801

\* \* \*

Operation and Service Manual for Nitrogen and Helium Pressurization Units 52E420013, 52E420014, AD- 856 803

\* \* \*

Operation and Service Manual for Guidance and Control Recorder Assembly 52E270062, AD- 857 156

\*REYNOLDS, H. N. \* \* \*

Operation and Service Manual for Spacecraft Ground Cooling Auxiliary Refrigeration Unit 52E180172, AD- 856 783

\*RIDDLE, C. D. \* \* \*

Flutter Test of a 0.50-Scale MDL meteoroid Shield Panel at Mach Numbers from 1.2 to 2.5. AD- 848 174

\*ROSNER, DANIEL E. \* \* \*

Nonequilibrium Stagnation Region Aerodynamic Heating of Hypersonic Glide Vehicles, AD-A030 389

\*ROTHWELL, P. L. \* \* \*

Particle Induced Visual Phenomena in Space, AD-A053 213

\* \* \*

Role of Nuclear Stars in the Light Flashes Observed on Skylab 4, AD-A053 214

PERSONAL AUTHOR INDEX-12  
UNCLASSIFIED  
ZOM07

PET-ROT

UNCLASSIFIED

- \*RUSSAK, MICHAEL \* \* \*  
Environmental Testing of Closed  
Pore Insulation (CPI). II. Salt  
Spray Testing.  
AD- 757 424
- \*RUSSAK, MICHAEL A. \* \* \*  
Environmental Testing of Closed  
Pore Insulation (CPI), III - Rain  
Erosion Testing.  
AD- 765 392
- \*SCHLOSSER, A. J. \* \* \*  
Solid Rocket Booster Dewatering  
System.  
AD-A028 742
- A Remote, Unmanned Dewatering  
System for Recovery of the Solid  
Rocket Booster of the Space Shuttle  
Program.  
AD-A063 077
- \*SEARS, G. A. \* \* \*  
ORBITAL BASING: KEY TO LOW COST  
SPACE OPERATIONS.  
AD- 655 342
- \*SEENEY, P. J. \* \* \*  
Analysis of Crew Escape Initiation  
Response Characteristics Form Titan  
IIIM/Gemini B State 'G' Abort  
Simulation.  
AD- 856 902
- \*SEWARD, WALTER D. \* \* \*  
OPTIMUM FEEDBACK CONTROL OF A  
SYNODIC SATELLITE.  
AD- 695 043
- Optimal Control of Libration Point  
Space Station.  
AD- 724 113
- \*SHAVER, R. D. \* \* \*
- The Space Shuttle as an Element in  
the National Space Program.  
AD- 729 770
- \*SHELDON, G. J. \* \* \*  
Re-Entry Module/Adapter  
Interconnect Fanning Aerodynamic  
Heating Wind Tunnel Tests AEDC  
Tunnel F.  
AD- 856 c58
- \*SHIPP, R. W. \* \* \*  
Gemini B Orbital Storage Test of  
Reentry Control System Engine  
Propellant Valves.  
AD- 856 882
- \*SILVER, L. G. \* \* \*  
Pressure and Heat Transfer Tests on  
the NASA Space Shuttle External  
Tank at Mach Number 16.  
AD-A015 743
- Viscous Effects on the Static  
Stability and Axial-Force  
Characteristics of the NASA Space  
Shuttle Orbiter at Mach Number 19.  
AD-A018 143
- \*SMIRNOV, V. \* \* \*  
The Value of an Orbital Minute.  
AD-A018 534
- \*SMITH, DALE K. \* \* \*  
Effects and Control of  
Contamination from a Scaled MOL  
attitude Control Thruster in a  
Tangential Orientation.  
AD- 860 371
- Effects and Control of  
Contamination from a Scaled MOL  
translational Thruster in a  
Longitudinal Orientation.  
AD- 861 021
- \*SMITH, RICHARD A. \* \* \*  
Operation and Service Manual for  
Thermocouple Checkout Box  
52E440047,  
AD- 857 164
- Operation and Service Manual for  
Portable Pyrotechnic Tester  
52E400004,  
AD- 857 172
- Operation and Service Manual for  
Control Relay EFC Tester 52E230014,  
AD- 857 175
- \*SMYTH, DOUGLAS N. \* \* \*  
The Mark IV Supersonic-Hypersonic  
Arbitrary-Body Program. Volume I.  
User's Manual.  
AD- 778 443
- The Mark IV Supersonic-Hypersonic  
Arbitrary-Body Program. Volume II.  
Program Formulation.  
AD- 778 444
- The Mark IV Supersonic-Hypersonic  
Arbitrary-Body Program. Volume III.  
Program Listings.  
AD- 778 445
- \*SMYTHE, E. W. \* \* \*  
Department of Defense Space  
Transportation System Orbiter  
Avionics Software Integration  
Study. Analysis of Orbiter Systems  
to Meet MASE Requirements.  
AD-A070 534
- \*SPINETTI, ROBERT L. \* \* \*  
Aerothermal Evaluation of the Space  
Shuttle Solid Rocket Booster and  
Solid Rocket Motor Thermal  
Protection System.  
AD-A070 444
- \*STALLINGS, D. W. \* \* \*

PERSONAL AUTHOR INDEX-13  
UNCLASSIFIED Z0W07

RUS-STA

# UNCLASSIFIED

- \* \* \*  
Infrared and Phase-Change Paint  
Measurements of Heat-Transfer on  
the Space Shuttle Orbiter.  
AD-A059 796
- \* \* \*  
Space Shuttle External Tank  
Instrumentation Evaluation.  
AD-A070 443
- \* \* \*  
\*STANISLAW, T. S. \* \* \*  
Development of Beta-Spodumene  
Closed Pore Insulation (CPI).  
AD- 729 882
- \* \* \*  
\*STEARMAN, RONALD O. \* \* \*  
Aeroelastic Stability of Thin Shell  
Structures at Subsonic Mach Numbers  
and the Active Suppression of  
Flutter Phenomena.  
AD- 741 899
- \* \* \*  
\*STEINBERG, SAAC R. \* \* \*  
Optimal Control of Libration Point  
Space Station.  
AD- 724 113
- \* \* \*  
\*STEINKAMP, HENRY W., JR \* \* \*  
Management of DOD Space Payload  
Integration in the Space Shuttle  
Era.  
AD-A026 384
- \* \* \*  
\*STEWART, M. L. \* \* \*  
Vibration Test of 58T030051-1  
Gemini B Adapter Relay Panel  
Assembly.  
AD- 856 677
- \* \* \*  
\*STOCKETT, T. E. \* \* \*  
Integrated Data Bus Study.  
AD- 875 858
- \* \* \*  
\*STONE, GORDON R. \* \* \*
- Orbit-to-Orbit Shuttle Propellant  
Integration and Handling Study.  
AD- 735 290
- \*STRIKE, W. T., JR \* \* \*  
Abort Separation Pressure  
Distributions on McDonnell-Douglas  
Space Shuttle Configurations at  
Mach Numbers 2, 3, and 5.  
AD- 742 995
- \* \* \*  
NASA-Convaair ACS Space Shuttle  
Study at Mach Number 8.0.  
AD- 75. 578
- \*STRUTZ, DENNIS \* \* \*  
Impact of Space Shuttle Support  
Facilities Construction on Special  
Interest Plant Species (Vandenberg  
AFB, CA).  
AD-A049 177
- \*TAI, C. L. \* \* \*  
TRANSIENT DYNAMIC RESPONSE OF  
ORBITING SPACE STATIONS.  
AD- 613 081
- \*TAIN, SHU \* \* \*  
Artificial Heavenly Palaces.  
AD-A075 198
- \*THEURER, BYRON \* \* \*  
Space Shuttle: A Case Study in  
Economic Analysis.  
AD-A033 871
- \*THOMAS, KENNETH \* \* \*  
SPACECRAFT UTILIZING THE LIFTING  
AND BALLISTIC REENTRY TECHNIQUES.  
PART I. SPACECRAFT MANEUVERING-  
AND DESCENT-SYSTEM HARDWARE:  
COMPILATION AND ANALYSIS OF  
EXTRACTS AND REVIEWS.  
AD- 647 646
- \*THOMSON, W. G. \* \* \*  
ASSEMBLY AND MAINTENANCE OF  
LIGHTWEIGHT METALLIC STRUCTURES IN  
SPACE.  
AD- 688 266
- \*THOMSON, W. T. \* \* \*  
INSTABILITY OF SPINNING SPACE  
STATIONS DUE TO CREW MOTION.  
AD- 621 861
- \*TOMLINSON, R. D. \* \* \*  
Department of Defense Space  
Transportation System (DOD/STS)  
Mission Operations Systems  
Definition Mission Assessment  
Report: Operations Design Mission  
A.  
AD-A045 103
- \*TRAPANI, R. G. \* \* \*  
CDRL Validation Test Plan for  
Environmental Monitor Unit.  
Sequence Number T016. Data Item  
Number UT454.  
AD- 857 012
- \*TRAPP, D. L. \* \* \*  
ADVANCED SYSTEMS TESTING ON A  
MANNED ORBITAL SPACE STATION.  
AD- 601 899
- \*TRIMMER, L. L. \* \* \*  
Heat-Transfer and Flow-Field Tests  
of the North American  
Rockwell/General Dynamics Convair  
Space Shuttle Configurations.  
AD- 755 354
- \*TRINGALI, CHARLES J. \* \* \*  
Operations Management of DOD Space  
Missions in the Shuttle Era.  
AD-A038 673

PERSONAL AUTHOR INDEX-14  
UNCLASSIFIED  
Z0W07

STA-TRI

UNCLASSIFIED

\*UNDERWOOD, R. E. \* \* \*  
Five Year Plan for Space Test  
Program.  
AD-A065 866

\*UNG, MAN T. \* \* \*  
Space Shuttle Digital Computer  
Simulation Benchmark.  
AD-A065 480

\*URFRIG, D. B. \* \* \*  
Department of Defense Space Shuttle  
on-Board Software Requirements.  
AD- 785 123

\*USELTON, BOB \* \* \*  
Dynamic Stability Testing of Space  
Shuttle Configurations During Abort  
Separation at Mach Numbers 1.76 and  
2.  
AD- 731 771

\*USELTON, BOB L. \* \* \*  
Pitch-, Yaw-, and Roll-amping  
Characteristics of a Shuttle  
Orbiter at M = 8.  
AD-A011 648

\*VAN LIERE, DENNIS A. \* \* \*  
A Kalman Filter Design for the  
Space Shuttle Orbiter Inertial  
Measuring Unit During  
Deorbit/Reentry Using Global  
Positioning System Satellite  
Information.  
AD-A055 465

\*VAN SCHAIK, PETER N. \* \* \*  
AN ASSESSMENT OF THE PRACTICALITY  
OF ORBITAL MAINTENANCE.  
AD- 658 454

\*VON BECKH, HARALD J. \* \* \*

G Protective Tilting Aircraft  
Seats.  
AD- 741 202

\*WAHL, NORMAN E. \* \* \*  
Rain Erosion Characteristics of  
Thermal Protection System Materials  
at Subsonic Velocities.  
AD- 750 793

\*WALLACE, ARTHUR R. \* \* \*  
Dynamic Stability Testing of Space  
Shuttle Configurations During Abort  
Separation at Mach Numbers 1.76 and  
2.  
AD- 731 771

\*WALLMAN, HAROLD \* \* \*  
RESEARCH ON A WASTE SYSTEM FOR  
AEROSPACE STATIONS.  
AD- 503 013

\*WANG, H. E. FRANK \* \* \*  
Five Year Plan for Space Test  
Program.  
AD-A065 866

\*WANNENWETSCH, G. D. \* \* \*  
Roughness and Wall Temperature  
Effects on Boundary-Layer  
Transition on a 0.0175-Scale Space  
Shuttle Orbiter Model Tested at  
Mach Number 8.  
AD-A038 895

\*WASKIEWICZ, JOHN D. \* \* \*  
Space Shuttle Windward Streamline  
Laminar Viscous Shock-Layer Flows  
at Angle of Attack--Comparison of  
Theory and Experiment.  
AD-A042 843

\*WEEKS, L. H. \* \* \*  
Five Year Plan for Space Test

Program.  
AD-A065 866

\*WHITE, P. D. \* \* \*  
BIO MEDICAL POTENTIAL OF A  
CENTRIFUGE IN AN ORBITING  
LABORATORY.  
AD- 472 550

\*WHITE, W. J. \* \* \*  
BIO MEDICAL POTENTIAL OF A  
CENTRIFUGE IN AN ORBITING  
LABORATORY.  
AD- 472 550

\*WINTER, ROBERT \* \* \*  
Buckling Analysis of Shuttle  
Disposable Liquid Hydrogen Tank  
with Floating Rings.  
AD- 743 508

\*WOLAVER, LYNN E. \* \* \*  
Optimal Control of Libration Point  
Space Station.  
AD- 724 113

\*WOLFE, R. H., JR. \* \* \*  
Department of Defense Space  
Transportation System Orbiter  
Avionics Software Integration  
Study. Analysis of Orbiter Systems  
to Meet MASE Requirements.  
AD-A070 634

\*WOODS, T. G. \* \* \*  
Gemini B Limit Switches.  
Spacecraft Pressure Effects.  
AD- 856 657

\*WOOTEN, R. C., JR. \* \* \*  
Impact of Space Shuttle Support  
Facilities Construction on Special  
Interest Plant Species (Vandenberg  
AFB, CA).

PERSONAL AUTHOR INDEX-15  
UNCLASSIFIED Z0007

UND-W00

AD-A083 001

DEFENSE TECHNICAL INFORMATION CENTER ALEXANDRIA VA  
SPACE STATIONS.(U)

F/B 22/2

APR 80

UNCLASSIFIED DTIC/SIB/80-82

RL

4-4

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED



END  
DATE  
FILMED  
5-80  
DTIC



UNCLASSIFIED

AD-A049 177

•ZAITSEV, YU.

\* \* \*

SPACE OBSERVATIONS: SCIENCE PUSHES  
BACK ITS HORIZONS.

AD- 702 322

•ZAKHAROV, V. M.

\* \* \*

SCIENTIFIC RESULTS FROM THE FLIGHT  
OF VANTAR AUTOMATIC IONOSPHERIC  
LABORATORIES. PART II.

AD- 704 045

•ZIEMAN, H.

\* \* \*

Operation and Service Manual for C-  
Band Antenna Probe Assembly  
52E190012.

AD- 856 785

\* \* \*

Operation and Service Manual for  
Spacecraft Battery Load Bank  
52E230073.

AD- 856 789

PERSONAL AUTHOR INDEX-16  
UNCLASSIFIED ZOMO7

ZAI-ZIE